

APPENDIX T

**REGIONAL MONITORING REPORT FOR THE NUTRIENT
TMDL**

**REPORT OF THE REGIONAL MONITORING PROGRAM
FOR THE NEWPORT/SAN DIEGO CREEK
WATERSHED NUTRIENT TMDL
(Resolution No. 98-9, as amended by Resolution No. 98-100)**

November 2002

Prepared and submitted on behalf of:

**The County of Orange
and
The Cities of Irvine, Tustin, Newport Beach,
Lake Forest, Santa Ana, Orange and Costa Mesa**

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1.0 INTRODUCTION

The Nutrient TMDL for the Newport Bay/San Diego Creek Watershed (Resolution No. 98-9, as amended by Resolution No. 98-100) requires that the Santa Ana Regional Water Quality Control Board (Regional Board) establish and oversee a regional monitoring program (RMP) for the Newport Bay watershed. The RMP is a coordinated program among the stakeholders to assess the attainment of the goals of the nutrient TMDL. The stated objectives of the monitoring program are to quantify the three endpoints of the nutrient TMDL: 1) the seasonal nutrient loading from the watershed; 2) the nutrient concentration in San Diego Creek, Reaches 1 and 2; and 3) the extent, magnitude, and duration of algal blooms in San Diego Creek and Newport Bay.

The RMP is composed of two components: a routine monitoring component and a special monitoring component. The routine monitoring includes most of the traditional monitoring that has occurred in the watershed. The special monitoring includes investigations into unanswered questions about nutrient sources and dynamics in the watershed.

This report is a summary of the results of the routine monitoring component. The County of Orange initiated this element of the RMP in February 2000 as a cooperative program with the cities of Costa Mesa, Irvine, Laguna Hills, Laguna Woods, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin. The reporting period covered by this report is July 1, 2001 – June 30, 2002. The monitoring was conducted according to the outline based on Regional Board guidance (**Appendix A**).

As part of the RMP, monitoring is conducted at nine sites in the Upper Newport Bay watershed and five sites in the Newport Bay. **Figure 1** is a map of these locations. **Table 1** is a list of the sites and the monitoring frequencies.

2.0 SAMPLING METHODS

Automatic samplers were used to collect composite samples during dry-weather and storm monitoring events as described in section 11 of the Annual Status Report. Grab samples were collected when manpower and equipment issues arose. The site at Agua Chinon was grab-sampled each time because shifting bed material and low channel discharge rates hampered automatic sampling.

The five locations in the Newport Bay were grab-sampled. Dry weather monitoring at these sites included sampling at the surface mid-depth and bottom of the water column. Subsurface samples were collected using an ISCO peristaltic pump, tygon tubing and a weighted sample strainer.

3.0 WATERSHED SAMPLING RESULTS

All data from the monitoring in Upper Newport Bay watershed are contained in **Appendix B** including the results of a special one-week intensive sampling in May 2002

of San Diego Creek, Peters Canyon Wash, Central Irvine, and Hines Nursery Channel. These data were evaluated by computing simple statistics on the dry-weather and storm runoff component from each site. Data from the May 2002 nutrient study were not included in the statistics because for most sites the large amount of data collected during this one-week study would skew the annual mean. **Table 2** is a summary of the statistics. The Central Irvine Channel, a tributary to Peters Canyon Wash, is monitored as part of the NPDES urban runoff program. Because this channel is a major contributor of nutrients to the San Diego Creek its data are also included in this report.

3.1 Nutrient Concentrations

Figure 2 is a graphical summary of the mean dry and wet-weather nitrate nitrogen concentrations measured at the RMP watershed sites and Central Irvine Channel (station code CICF25). **Figure 3** is a summary of the mean total nitrogen concentrations. **Figure 4** shows the number of samples collected from each site. The results show that the greatest mean concentration of nitrate nitrogen was measured in the Central Irvine Channel during dry weather conditions. These results are consistent with results from the 2000-2001 sampling year.

Figure 5 is a graphical representation of the daily concentration of total nitrogen and total inorganic nitrogen for each composite or grab-sampling of San Diego Creek at Campus Drive (SDMF05). Samples that were collected during storm events are represented with a different symbol than those collected during dry weather conditions. This graph illustrates that 98% of the samples collected throughout the year had a concentration below the objective of 13 mg/L TIN. **Figure 6** is a graphical representation of the daily concentration of total nitrogen and total inorganic nitrogen for each sampling of San Diego Creek at Culver (WYLSED). This graph shows that 73% of the samples collected had dry weather TIN concentrations between 15 and 20 mg/L. Nine percent of the time the concentrations were below the objective of 5 mg/L. As in figure 5, samples that were collected during storm events are represented with a different symbol than those collected during dry weather conditions.

3.2 Flow Measurements

Continuous water level recording gages are maintained at Peters Canyon Wash, San Diego Creek at Culver, San Diego Creek at Campus, Santa Ana Delhi Channel, Lane Channel, and Costa Mesa Channel. Storm hydrographs (water level vs. time) from each monitored storm at these stations are presented in **Appendix C**.

With the exception of Lane Channel, rating curves based on numerous field measurements have been developed. Until reliable ratings can be developed for Lane Channel, discharge rates will be estimated by the Manning Equation. Preliminary streamgaging measurements at Lane Channel show that the Manning Equation overestimates the discharge rate at the lower end of the rating curve. The mean daily discharge rates for the streamgages with established channel ratings are presented in **Table 3**.

3.3 Nutrient Loads

The dry-weather and stormwater nutrient loads from this monitoring period were calculated for each of the channels with established ratings. The loads from each sampled storm are presented in **Table 4**. The mean dry-weather nitrate nitrogen and total nitrogen loads from each site are plotted in **Figure 7**. The graph shows that the average load from Peters Canyon Wash exceeds the average load measured in San Diego Creek at Campus Drive. The daily load from each San Diego Creek at Campus Drive dry-weather sampling is presented in **Figure 8**. The reduction in the loads downstream is due primarily to the operation of the Irvine Ranch Water District's (IRWD) Wetland Treatment system as illustrated in **Figure 9**. In addition **Figure 10**, **Figure 11** and **Figure 12** compare the average monthly dry-weather total nitrogen loads between last sampling year and this sampling year for San Diego Creek at Campus Drive, San Diego Creek at Culver Drive (WYLSED), and Peters Canyon Wash at Barranca respectively.

4.0 BAY SAMPLING RESULTS

Dry-weather sampling of the Newport Bay was conducted nine times during the reporting period. Sampling events during the month of August, November, and March were compromised due to various equipment or weather related sampling problems. The data from storm sampling of the bay is included in **Appendix D**.

Laboratory results from samples collected at two stations in the lower reach of Upper Newport Bay (North Star Beach, UNBNSB and Coast Highway Bridge, UNBCHB) and one station in the lower bay (Harbor Island Reach, LNBHIR) consistently showed low nitrate nitrogen concentrations, often nearing laboratory detection limits of 0.10 mg/L NO₃ as N. **Figure 13** shows the average dry-weather concentrations of nitrate nitrogen in the Bay. As expected the concentrations decrease from the upper bay to the lower bay.

Figure 14 shows the average dry-weather nitrate nitrogen concentrations at the uppermost station upper Newport Bay at Jamboree Road (UNBJAM). All samples collected at the surface of UNBJAM had concentrations greater than 0.10 mg/L NO₃ as N.

5.0 ALGAL SURVEYS

Alex Horne and Associates provided an analysis of the data collected in the algal biomass surveys. A draft report of this analysis is contained **Appendix E**. A series of infrared aerial photographs are scheduled to be taken by Irvine Ranch Water District (IRWD) in the coming year. These photographs will be digitized and provided at a later date.

As recommended by Dr. Alex Horne, sampling was performed when the tides in the bay were between 0 and 2 feet. This condition occurred during periods of daylight only a few times each month. Three algae sampling events were compromised due to various tidal condition and equipment problems. Surface water samples were collected and physical

measurements were made during algae sampling twice during the 2001-2002 year. These results are also contained in **Appendix E**.

Tables

Table 1
RMP Monitoring Frequencies

Station Code	Location	Weather	Special Requirements	Annual Frequency of Measurement							
				Temperature	Dissolved O ₂	pH	Conductivity	Nutrients	ortho - PO ₄	flowrate	hardness
SADF01	Santa Ana Delhi Ch u/s Irvine	Dry	24	24	24	24	24	24	24	365	24
		Storm	3	3	3	3	3	3	3	TS	3
SDMF05	San Diego Creek @ Campus	Dry	52	52	52	52	52	52	52	365	52
		Storm	3	3	3	3	3	3	3	TS	3
BCF04	Bonita Canyon Ch u/s University	Dry	12	12	12	12	12	12	12	12	12
		Storm	3	3	3	3	3	3	3	3	3
CMCG02	Costa Mesa Ch @ Highland*	Dry	12	12	12	12	12	12	12	12	12
		Storm	3	3	3	3	3	3	3	3	3
MIRF07	El Modena Irvine Ch @ Michelle	Dry	12	12	12	12	12	12	12	12	12
		Storm	3	3	3	3	3	3	3	3	3
LANF08	Lane Ch u/s Jamboree	Dry	12	12	12	12	12	12	12	12	12
		Storm	3	3	3	3	3	3	3	3	3
ACWF18	Agua Chinon Wash @ SDC confluence	Dry	12	12	12	12	12	12	12	12	12
		Storm	3	3	3	3	3	3	3	3	3
BARSED	Peters Canyon Wash @ Barranca	Dry	24	24	24	24	24	24	24	365	24
		Storm	3	3	3	3	3	3	3	TS	3
WYLSED	San Diego Creek @ Harvard	Dry	24	24	24	24	24	24	24	365	24
		Storm	3	3	3	3	3	3	3	TS	3
UNBJAM	Upper Newport Bay in Unit I Basin	Dry	S, M, B	12	12	12	12	12	12		
UNBSDC	Upper Newport Bay in Unit II Basin	Dry	S, M, B	12	12	12	12	12	12		
UNBNSB	Upper Newport Bay at North Star Beach	Dry	S, M, B	12	12	12	12	12	12		
UNBCHB	Upper Newport Bay at Coast Highway Bridge	Dry	S, M, B	12	12	12	12	12	12		
LNBHIR	Lower Newport Bay at Harbor Island Reach	Dry	S, M, B	12	12	12	12	12	12		
Horne # 2	South end of Shellmaker Island	Dry		9	9		9	9	9		9
Horne # 4	South tip of Middle Island	Dry		9	9		9	9	9		9
Horne # 8	North end of Middle Island	Dry		9	9		9	9	9		9
Horne # 10	West side of the Narrows	Dry		9	9		9	9	9		9
Horne # 12	Southwest side of Unit II Basin	Dry		9	9		9	9	9		9
Horne # 15	North end of Unit II Basin, West side of dike	Dry		9	9		9	9	9		9
Horne # 18	South side of Unit I Basin	Dry		9	9		9	9	9		9
Horne # 19	North side of Unit I Basin	Dry		9	9		9	9	9		9
Horne # 24	Northeast side of Unit I Basin	Dry		9	9		9	9	9		9

Nutrients = Nitrate + Nitrite, Ammonia, TKN, total Phosphate, TSS, VSS, turbidity

* Sampled weekly as model urban runoff station

S, M, B - surface mid depth, bottom

TS - Total volume of storm runoff and amount sampled

Table 2
Summary of Data from RMP Channels
Excluding May 2002 Nutrient Study Data

Station	NO ₃ as N (mg/L)			NH ₃ (mg/L)			TKN (mg/L)			TN (mg/L)			PO ₄ (mg/L)			O-PO ₄ (mg/L)			TSS (mg/L)			VSS (mg/L)						
	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	
ACWF18	n	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	mean	5.55	5.55	0.186	0.186	1.47	1.47	7.02	7.02	3.41	3.41	0.69	0.69	72	72	14.60	14.60	14.60	14.60	14.60	14.60	14.60	14.60	14.60	14.60			
	geomean	4.47	4.47	0.104	0.104	1.09	1.09	6.07	6.07	1.59	1.59	0.51	0.51	26.07	26.07	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88	11.88			
	max	10.8	10.8	0.847	0.847	6.00	6.00	12.14	12.14	15.30	15.30	1.80	1.80	490	490	56	56	56	56	56	56	56	56	56	56	56	56	
	min	1.1	1.1	0.050	0.050	0.51	0.51	1.84	1.84	0.06	0.06	0.08	0.08	10	10	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00			
	std dev	3.48	3.48	0.261	0.261	1.64	1.64	3.48	3.48	4.51	4.51	0.56	0.56	149	149	14.55	14.55	14.55	14.55	14.55	14.55	14.55	14.55	14.55	14.55			
SADF01	n	38	22	16	38	22	16	38	22	16	38	22	16	38	22	16	37	21	16	38	22	16	38	22	16	38	22	16
	mean	3.44	5.12	1.14	0.18	0.09	0.30	1.55	1.11	2.16	5.00	6.23	3.30	0.44	0.30	0.63	0.06	0.05	0.09	24.46	19.43	31.06	11.58	10.55	13.00	11.58	10.55	13.00
	geomean	1.66	2.45	0.97	0.11	0.07	0.20	1.35	1.05	1.92	3.45	3.84	2.97	0.35	0.27	0.50	0.05	0.04	0.07	17.82	15.39	21.60	11.12	10.36	12.26	11.12	10.36	12.26
	max	58.71	58.71	3.39	1.05	0.271	1.05	5	1.7	5	59.21	59.21	8.39	1.53	0.765	1.53	0.183	0.177	0.183	96	96	94	26	22	26	26	22	26
	min	0.45	0.59	0.45	0.05	0.05	0.05	0.5	0.5	0.81	1.53	1.79	1.53	0.0612	0.0612	0.184	0.01	0.01	0.01	10	10	10	10	10	10	10	10	10
	std dev	9.36	12.12	0.74	0.22	0.06	0.30	0.93	0.36	1.12	9.2	12.0	1.7	0.35	0.16	0.44	0.04	0.04	0.05	23.75	19.42	27.73	4.00	2.56	5.15	4.00	2.56	5.15
BARSED	n	44	25	19	44	25	19	44	25	19	44	25	19	44	25	19	44	25	19	43	23	20	45	25	20	45	25	20
	mean	10.25	12.56	7.21	0.25	0.17	0.36	2.09	1.20	3.27	12.34	13.76	10.48	1.58	0.92	2.46	0.31	0.25	0.39	66.93	12.51	129.50	17.66	10.03	27.20	17.66	10.03	27.20
	geomean	8.35	10.35	6.30	0.14	0.09	0.23	1.58	1.12	2.50	11.04	11.70	10.23	1.24	0.81	2.18	0.27	0.22	0.37	22.63	11.64	48.60	13.07	10.03	18.22	13.07	10.03	18.22
	max	65	65	12	1.28	1.1	1.28	9	2.3	9	66.25	66.25	15.55	4.9	2.17	4.9	0.665	0.534	0.665	540	36	540	100	10.6667	100	100	10.6667	100
	min	1.33	1.33	1.69	0.05	0.05	0.05	0.61	0.61	0.77	2.18	2.18	6.28	0.122	0.122	0.673	0.107	0.107	0.147	10	10	10	10	10	10	10	10	10
	std dev	9.24	11.50	3.25	0.30	0.26	0.33	1.93	0.46	2.45	8.85	11.47	2.30	1.12	0.46	1.14	0.15	0.13	0.13	126.18	6.27	165.66	21.17	0.13	29.41	21.17	0.13	29.41
WYLSED	n	41	23	18	41	23	18	41	23	18	41	23	18	41	23	18	41	23	18	39	21	18	41	23	18	41	23	18
	mean	13.28	15.82	10.05	0.11	0.05	0.18	1.38	0.77	2.15	14.66	16.59	12.20	0.69	0.34	1.13	0.13	0.07	0.21	59.59	15.71	110.78	15.46	10.57	21.72	15.46	10.57	21.72
	geomean	12.13	14.84	9.38	0.08	0.05	0.13	1.08	0.70	1.85	13.88	15.72	11.83	0.45	0.27	0.86	0.08	0.04	0.16	19.53	11.30	36.97	12.34	10.37	15.41	12.34	10.37	15.41
	max	19	19	17	0.437	0.089	0.437	5	1.5	5	20.07	20.07	18.04	4.28	0.704	4.28	0.57	0.16	0.57	1030	130	1030	140	23	140	140	23	140
	min	3.39	3.39	4.97	0.05	0.05	0.05	0.36	0.36	0.72	3.82	3.82	7.29	0.061	0.061	0.184	0.01	0.01	0.01	10	10	10	10	10	10	10	10	10
	std dev	4.89	4.17	3.74	0.11	0.01	0.14	1.08	0.35	1.21	4.24	4.09	3.03	0.75	0.21	0.95	0.12	0.06	0.13	166.71	26.19	236.99	20.66	2.71	30.35	20.66	2.71	30.35
BCF04	n	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	mean	0.56	0.56	0.05	0.05	0.79	0.79	1.35	1.35	0.51	0.51	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	37.90	37.90	37.90	10.70	10.70	10.70	10.70	10.70	10.70
	geomean	0.43	0.43	0.05	0.05	0.71	0.71	1.25	1.25	0.43	0.43	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	25.66	25.66	25.66	10.62	10.62	10.62	10.62	10.62	10.62
	max	1.78	1.78	0.05	0.05	1.9	1.9	2.42	2.42	1.35	1.35	4.27	4.27	100	100	100	100	100	100	14	14	14	14	14	14	14	14	14
	min	0.10	0.10	0.05	0.05	0.39	0.39	0.68	0.68	0.184	0.184	0.05	0.05	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	std dev	0.49	0.49	0.00	0.00	0.43	0.43	0.60	0.60	0.35	0.35	1.31	1.31	33.2	33.2	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49		
LANF08	n	25	11	14	25	11	14	25	11	14	25	11	14	25	11	14	25	11	14	25	11	14	25	11	14	25	11	14
	mean	4.95	5.35	4.63	0.28	0.16	0.37	2.08	1.37	2.64	7.03	6.73	7.27	0.82	0.69	0.92	0.11	0.14	0.09	77.60	19.55	123.21	17.60	10.27	23.36	17.60	10.27	23.36
	geomean	4.34	4.98	3.89	0.20	0.11	0.32	1.73	1.26	2.21	6.63	6.58	6.67	0.68	0.58	0.77	0.09	0.11	0.08	34.50	17.02	60.12	13.86	10.24	17.58	13.86	10.24	17.58
	max	10	8	10	1.12	0.713	1.12	7.2	2.9	7.2	13.75	9.05	13.75	3.03	2.11	3.03	0.417	0.417	0.125	680	58	680	96	13	96	96	13	96
	min	1.33	1.99	1.33	0.05	0.05	0.13	0.67	0.67	0.89	2.73	4.89	2.73	0.31	0.31	0.34	0.01	0.038	0.01	10	10	11	10	10	10	10	10	10
	std dev	2.31	2.00	2.56	0.24	0.19	0.24	1.53	0.64	1.81	2.47	1.51	3.07	0.62	0.52	0.69	0.08	0.11	0.03	139.03	13.49	174.51	18.38	0.90	23.27	18.38	0.90	23.27

Table 2
Summary of Data from RMP Channels
Excluding May 2002 Nutrient Study Data

Station	NO ₃ as N (mg/L)			NH ₃ (mg/L)			TKN (mg/L)			TN (mg/L)			PO ₄ (mg/L)			O-PO ₄ (mg/L)			TSS (mg/L)			VSS (mg/L)			
	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	all	Dry	Storm	
CICF25	n	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	mean	32.97	32.97	4.79	4.79	6.31	6.31	39.28	39.28	8.49	8.49	2.19	2.19	181.58	181.58	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61
	geomean	28.62	28.62	1.23	1.23	4.89	4.89	34.69	34.69	7.77	7.77	1.91	1.91	83.27	83.27	19.71	19.71	19.71	19.71	19.71	19.71	19.71	19.71	19.71	19.71
	max	71.41	71.41	25.6	25.6	22	22	83.62	83.62	18.4	18.4	4.65	4.65	1441.43	1441.43	241.286	241.286	241.286	241.286	241.286	241.286	241.286	241.286	241.286	241.286
	min	7.90	7.90	0.05	0.05	0.99	0.99	10.70	10.70	3.06	3.06	0.47	0.47	10	10	10	10	10	10	10	10	10	10	10	10
	std dev	16.56	16.56	7.01	7.01	4.83	4.83	18.75	18.75	3.67	3.67	1.11	1.11	298.90	298.90	47.92	47.92	47.92	47.92	47.92	47.92	47.92	47.92	47.92	47.92
MIRF07	n	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	mean	2.18	2.18	0.09	0.09	1.82	1.82	4.00	4.00	0.90	0.90	0.18	0.18	15.67	15.67	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22
	geomean	1.99	1.99	0.08	0.08	1.74	1.74	3.85	3.85	0.81	0.81	0.16	0.16	14.26	14.26	10.20	10.20	10.20	10.20	10.20	10.20	10.20	10.20	10.20	10.20
	max	5	5	0.204	0.204	3.1	3.1	6.57	6.57	1.56	1.56	0.318	0.318	29	29	12	12	12	12	12	12	12	12	12	12
	min	1.20	1.20	0.05	0.05	1.2	1.2	2.60	2.60	0.337	0.337	0.069	0.069	10	10	10	10	10	10	10	10	10	10	10	10
	std dev	1.14	1.14	0.05	0.05	0.61	0.61	1.20	1.20	0.40	0.40	0.08	0.08	7.55	7.55	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
CMCG02	n	64	46	18	64	46	18	64	46	18	64	46	18	62	46	16	63	46	17	63	46	17	33.33	34.43	30.35
	mean	1.48	1.51	1.39	0.42	0.35	0.61	4.94	4.91	5.01	6.42	6.42	6.41	2.33	2.49	1.89	0.32	0.34	0.26	59.83	62.09	53.71	33.33	34.43	30.35
	geomean	0.39	0.26	1.14	0.17	0.15	0.26	2.93	2.79	3.33	3.73	3.43	4.64	1.55	1.57	1.49	0.27	0.28	0.24	19.16	18.26	21.85	15.12	14.51	16.89
	max	54	54	4	5.64	5.64	3.1	44	44	15	56.99	56.99	18.06	19.9	19.9	4.9	1.78	1.78	0.50	1080	1080	230	540	540	120
	min	0.10	0.10	0.41	0.05	0.05	0.05	1.1	1.1	1.1	1.30	1.30	1.81	0.0918	0.0918	0.337	0.08	0.08	0.13	10	10	10	10	10	10
	std dev	6.74	7.95	0.95	0.84	0.85	0.83	7.49	8.34	4.87	9.94	11.25	5.60	3.05	3.49	1.36	0.23	0.26	0.10	163.18	185.34	80.76	81.08	92.14	39.74
SDMF05	n	52	44	8	52	44	8	52	44	8	52	44	8	52	44	8	52	44	8	52	44	8	52	44	8
	mean	5.27	5.16	5.90	0.17	0.16	0.24	1.97	1.98	1.94	7.24	7.13	7.84	0.66	0.58	1.06	0.08	0.05	0.23	64.86	69.13	41.38	13.81	14.39	10.63
	geomean	4.82	4.69	5.57	0.12	0.11	0.20	1.86	1.86	1.91	6.90	6.77	7.67	0.59	0.53	1.03	0.04	0.03	0.22	55.26	59.65	36.31	12.98	13.48	10.57
	max	15	15	9	0.64	0.64	0.436	3.9	3.9	2.5	15.41	15.41	10.18	1.62	1.25	1.62	0.395	0.296	0.395	180	180	70	32	32	13
	min	2.08	2.08	2.48	0.05	0.05	0.05	0.51	0.51	1.5	3.46	3.46	4.78	0.061	0.061	0.765	0.01	0.01	0.132	10	10	10	10	10	10
	std dev	2.39	2.47	1.90	0.15	0.16	0.13	0.66	0.70	0.37	2.29	2.38	1.65	0.30	0.25	0.28	0.09	0.06	0.08	36.09	36.92	19.25	5.77	5.77	1.19

Table 3
Mean Daily Discharge Rates (cfs) at RMP Streamgages

	San Diego Creek at Campus Drive											
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	8.1	9.7	12.0	12.0	7.5	5.4	14.0	11.0	12.0	9.3	8.6	6.7
2	8.7	11.0	11.0	12.0	6.9	4.7	11.0	9.6	11.0	8.9	9.8	6.7
3	7.7	9.8	11.0	13.0	5.8	39.0	9.2	7.5	9.6	8.8	7.3	10.0
4	11.0	10.0	11.0	14.0	13.0	13.0	9.1	5.1	11.0	6.5	7.5	8.6
5	9.7	11.0	11.0	9.9	14.0	7.2	5.5	6.2	11.0	6.1	7.3	7.7
6	15.0	11.0	11.0	10.0	9.5	7.0	5.5	7.8	10.0	22.0	7.9	7.1
7	12.0	12.0	11.0	8.8	8.0	6.6	4.8	8.7	97.0	11.0	7.3	7.9
8	10.0	13.0	9.4	6.9	8.4	7.8	5.8	8.3	22.0	8.9	6.0	7.1
9	9.6	13.0	12.0	7.0	6.6	7.4	5.8	8.1	8.5	9.5	5.5	7.7
10	6.7	9.2	13.0	6.6	7.4	22.0	5.3	7.4	7.8	9.4	6.7	6.4
11	12.0	13.0	15.0	6.0	10.0	26.0	4.8	9.2	7.4	10.0	6.6	6.4
12	13.0	14.0	14.0	6.8	138.0	9.1	5.0	11.0	7.5	11.0	6.5	6.8
13	16.0	12.0	14.0	12.0	85.0	7.2	5.0	11.0	7.4	12.0	6.5	7.3
14	9.8	11.0	16.0	14.0	15.0	90.0	5.5	12.0	7.0	11.0	5.7	7.4
15	8.3	11.0	14.0	12.0	13.0	34.0	6.4	14.0	6.6	19.0	7.0	6.8
16	9.4	11.0	12.0	10.0	8.3	11.0	6.9	13.0	6.7	23.0	6.0	5.8
17	11.0	11.0	13.0	9.8	8.0	11.0	13.0	89.0	12.0	14.0	5.5	6.0
18	11.0	9.9	11.0	9.4	8.1	13.0	6.3	34.0	69.0	13.0	6.5	8.1
19	11.0	10.0	16.0	8.9	7.9	11.0	4.9	12.0	9.9	12.0	9.8	7.3
20	11.0	11.0	10.0	9.6	7.2	9.0	4.7	13.0	8.1	11.0	8.6	8.0
21	11.0	11.0	9.9	10.0	4.7	202.0	4.2	11.0	11.0	11.0	7.2	6.5
22	11.0	11.0	12.0	9.3	4.3	35.0	4.5	12.0	8.7	11.0	5.8	6.7
23	12.0	10.0	11.0	11.0	4.5	16.0	4.7	13.0	26.0	10.0	6.5	7.5
24	11.0	11.0	13.0	17.0	312.0	11.0	4.2	14.0	12.0	23.0	6.8	7.9
25	12.0	11.0	11.0	18.0	58.0	11.0	3.9	13.0	9.5	27.0	6.8	7.8
26	12.0	10.0	9.0	11.0	11.0	12.0	3.9	13.0	8.7	31.0	6.9	7.2
27	12.0	11.0	6.3	7.4	7.5	13.0	36.0	13.0	8.1	18.0	7.0	9.9
28	12.0	13.0	9.2	5.6	5.7	10.0	314.0	13.0	8.4	11.0	6.8	6.6
29	11.0	12.0	11.0	8.3	63.0	62.0	21.0		8.6	11.0	6.9	6.9
30	11.0	11.0	12.0	5.4	19.0	97.0	13.0		8.7	9.2	7.1	5.6
31	11.0	12.0		7.0		61.0	14.0		8.9		6.5	
TOTAL	337.00	346.60	351.80	308.70	877.30	871.40	561.90	399.90	460.10	398.60	216.90	218.40
MEAN	10.87	11.18	11.73	9.96	29.24	28.11	18.13	14.28	14.84	13.29	7.00	7.28
MAX	16.00	14.00	16.00	18.00	312.00	202.00	314.00	89.00	97.00	31.00	9.80	10.00
MIN	6.70	9.20	6.30	5.40	4.30	4.70	3.90	5.10	6.60	6.10	5.50	5.60
AC-FT	668.43	687.47	697.79	612.30	1740.10	1728.40	1114.51	793.19	912.60	790.61	430.21	433.19

Table 3
Mean Daily Discharge Rates (cfs) at RMP Streamgages

	Peters Canyon Wash											
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	8.30	7.70	7.50	7.70	6.40	6.60	6.00	7.30	7.20	5.70	4.30	4.80
2	8.30	7.70	7.30	8.00	6.60	6.50	5.80	6.30	6.90	6.00	4.40	4.80
3	7.50	7.70	7.50	7.80	6.40	15.00	6.60	5.50	6.90	6.00	4.30	4.70
4	7.80	7.50	8.00	7.50	8.20	6.50	5.80	5.10	7.20	6.20	4.70	7.20
5	7.70	7.30	8.00	7.80	6.40	5.70	5.30	4.70	6.70	6.30	5.20	5.10
6	7.50	7.60	7.80	7.80	5.40	5.60	5.10	6.80	8	14.00	5.60	4.80
7	8.00	7.70	7.50	7.20	5.40	6.20	4.60	7.40	23.00	6	5.80	4.80
8	8.80	7.80	7.30	7.30	5.50	6.70	4.20	7.30	9.70	6.10	5.90	4.80
9	9.60	7.70	7.20	7.80	5.60	5.90	4.20	5.70	7	5.90	6.10	4.70
10	9.40	7.20	7.20	7.80	5.70	5.90	4	6	7	5.70	6.20	4.50
11	9.30	6.90	8.60	7.50	5.60	5.90	5	6.80	6.90	5.80	6.30	4.50
12	8.70	6.80	8.20	8.00	72.00	6.00	5	7	6.80	5.90	6.40	5.10
13	8.40	6.90	8.00	9.40	19.00	6.30	5.10	7	7.50	5.50	6.80	5.10
14	8.20	6.70	8.00	9.00	7.00	26.00	5.10	6.90	7.40	9.60	6.80	5.40
15	7.80	6.90	8.30	8.00	6.00	6.90	4.90	7.50	7.20	21.00	6.70	5.30
16	7.70	6.90	7.70	7.80	5.30	6.40	5.50	8.10	7.20	16.00	6.50	5.10
17	7.50	6.90	7.20	7.60	5.10	6.90	5.60	33.00	16.00	7.10	6.40	5.10
18	7.60	6.90	7.20	7.20	6.70	7.20	5.30	7.60	12.00	690	6.10	5.10
19	7.70	7.00	7.20	7.20	6.40	7.50	5.20	6.60	7.40	670	8.80	5.40
20	7.10	6.90	6.90	6.50	6.70	8.00	5.10	7	7.10	600	6.20	5.40
21	6.80	6.90	6.70	6.40	6.50	56.00	5.10	7.50	6.90	590	5.80	5.30
22	6.70	7.20	6.70	6.90	6.90	9.70	5.50	7.50	6.90	590	5.60	5.10
23	6.50	7.40	6.70	6.90	6.90	7.10	5.50	7.10	11.00	520	5.10	5.90
24	6.50	7.60	6.40	6.70	70.00	6.90	5	7.50	6.80	130	5.40	5.90
25	6.70	8.00	6.20	6.70	8.60	7.10	5.40	8	6.20	7.80	5.60	6.20
26	6.90	8.20	6.40	7	5.70	7.20	6	8	6.20	11.00	5.60	5.60
27	6.90	8.30	6.40	7	5.70	7.10	15	8	6.20	5.60	5.70	6.90
28	7.20	8.00	6.20	6.70	6.10	6.70	126	8	6.10	4.10	5.90	5.40
29	7.00	8.00	6.20	6.20	24.00	27.00	8.60		5.90	4.50	5.60	5.40
30	7.40	7.80	6.90	6	7.00	25.00	7.50		5.70	4.10	5.60	5.40
31	7.30	7.80		5.90		9.80	7.90		5.60		5.60	
TOTAL	238.80	229.90	217.40	226.70	348.80	327.30	301.10	220.80	249.30	3966.20	181.00	158.80
MEAN	7.70	7.42	7.25	7.31	11.63	10.56	9.71	7.89	8.04	132.21	5.84	5.29
MAX	9.6	8.3	8.6	9.4	72.0	56.0	126.0	33.0	23.0	690.0	8.8	7.2
MIN	6.5	6.7	6.2	5.9	5.1	5.6	4.2	4.7	5.6	4.1	4.3	4.5
AC-FT	473.65	456.00	431.21	449.65	691.83	649.19	597.22	437.95	494.48	7866.84	359.01	314.98

Table 3
Mean Daily Discharge Rates (cfs) at RMP Streamgages

	San Diego Creek at Culver											
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	2.00	1.10	1.10	0.88	0.84	5.00	2.30	1.80	1.10	2.20	0.65	0.66
2	1.60	0.85	1.10	0.86	1.20	2.10	1.90	1.60	1.10	2.20	0.71	0.67
3	1.60	0.83	1.20	0.84	0.87	20.00	1.70	1.40	1.10	2.20	0.71	0.66
4	1.60	0.83	1.20	0.98	1.50	4.20	1.40	1.30	1.20	2.60	0.79	0.66
5	3.40	1.10	1.30	1.20	1.70	2.50	1.30	1.30	1.20	2.60	0.97	0.62
6	1.60	1.20	1.40	1.30	0.80	2.40	1.20	1.30	0.79	3.70	1.10	0.58
7	1.60	1.50	1.60	1.30	0.84	2.60	1.10	1.30	10.00	2.40	1.10	0.58
8	1.30	1.50	1.60	1.10	0.71	2.50	1.10	1.50	1.70	1.20	1.30	0.62
9	1.50	1.50	1.80	1.30	0.66	2.50	1.20	1.60	0.70	1.10	1.30	0.66
10	1.60	1.50	1.90	1.40	0.72	12.00	1.20	1.40	0.75	0.90	1.30	0.66
11	1.50	0.75	2.00	1.40	1.40	7.70	1.30	1.30	0.75	0.83	1.30	0.66
12	1.30	0.75	1.90	1.70	56.0	2.40	1.30	1.20	0.79	0.79	1.30	0.71
13	1.30	0.83	1.80	2.00	84.0	2.20	1.30	1.10	0.78	0.75	1.30	0.66
14	1.30	1.20	1.80	1.90	2.50	24.00	1.50	1.10	0.75	0.74	1.20	0.66
15	1.20	2.00	1.70	1.30	1.20	9.00	1.50	1.10	0.79	2.90	0.94	0.77
16	1.20	2.00	1.50	1.00	0.67	2.30	1.50	1.20	0.79	1.30	0.94	0.79
17	1.10	2.00	1.10	1.50	0.66	1.90	1.50	30.00	2.30	0.71	1.10	0.75
18	1.20	2.00	1.00	1.20	0.73	1.90	1.50	3.60	24.00	6.90	0.83	0.71
19	1.20	2.00	1.10	1.50	0.77	1.80	1.60	1.60	1.50	6.70	1.10	0.83
20	1.10	2.10	0.93	1.30	0.83	1.60	1.60	1.30	0.94	6.00	1.20	0.83
21	1.30	1.60	0.96	1.30	1.00	98.00	1.60	1.20	0.81	5.90	1.10	0.87
22	1.50	1.20	1.40	1.20	1.10	15.00	1.60	1.20	0.83	5.90	0.83	1.10
23	1.20	1.10	0.66	1.10	1.20	3.90	1.50	1.20	5.80	5.20	0.75	0.94
24	1.20	1.20	0.75	1.10	130	2.20	1.60	1.20	2.50	13.00	0.74	0.83
25	0.83	1.20	1.00	0.85	17.00	2.10	1.60	1.30	1.90	3.10	0.71	0.83
26	0.75	1.10	0.82	0.79	2.00	1.80	1.60	1.20	1.80	2.50	0.71	0.79
27	0.75	1.10	0.75	0.90	1.50	2.00	2.30	1.20	1.90	1.30	0.71	0.79
28	0.83	1.10	0.75	1.00	1.70	2.00	109	1.20	2.00	0.76	0.69	0.94
29	0.83	1.10	0.90	0.79	680	300.0	5.40		1.80	0.77	0.71	0.94
30	0.94	0.94	1.00	0.92	4.50	620.0	2.30		2.00	0.71	0.71	1.10
31	0.94	0.95		0.88		450.0	2.10		2.00		0.75	
TOTAL	41.27	40.13	38.02	36.79	998.60	1607.60	159.60	67.70	76.37	87.86	29.55	22.87
MEAN	1.33	1.29	1.27	1.19	33.29	51.86	5.15	2.42	2.46	2.93	0.95	0.76
MAX	3.4	2.1	2.0	2.0	680.0	620.0	109.0	30.0	24.0	13.0	1.3	1.1
MIN	0.8	0.8	0.7	0.8	0.7	1.6	1.1	1.1	0.7	0.7	0.7	0.6
AC-FT	81.86	79.60	75.41	72.97	1980.69	3188.63	316.56	134.28	151.48	174.27	58.61	45.36

Table 3
Mean Daily Discharge Rates (cfs) at RMP Streamgages

	EI Modena - Irvine Channel											
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	2.10	1.10	2.20	0.88	0.96	1.20	0.92	0.78	1.30	2.00	2.50	1.40
2	2.40	1.30	1.70	0.86	1.10	1.40	0.92	0.80	1.40	1.30	2.60	1.50
3	2.50	1.80	1.90	0.88	1.00	2.70	1.60	0.80	1.60	1.10	2.50	1.80
4	1.90	1.50	1.80	0.97	0.94	0.87	1.10	0.85	1.90	1.10	2.60	2.20
5	2.40	1.40	2.50	1.00	0.91	0.81	1.00	0.87	1.30	1.60	2.60	2.00
6	2.40	1.60	2.60	1.00	0.88	0.85	1.20	0.90	1.70	3.70	2.60	2.30
7	2.40	1.80	2.30	1.00	0.85	0.97	0.96	0.88	9.10	1.30	2.60	2.40
8	2.10	1.50	2.40	0.97	0.89	0.90	1.10	0.82	1.60	1.40	2.70	2.70
9	1.70	1.90	2.40	0.97	0.83	1.10	1.00	0.91	1.20	2.20	2.70	2.60
10	1.70	2.20	2.50	0.97	0.86	3.30	0.93	0.82	1.20	1.90	2.60	1.70
11	1.80	1.80	2.30	1.00	0.84	1.10	1.00	1.00	1.30	3.20	2.70	1.70
12	1.80	2.10	2.10	0.97	0.91	0.85	1.10	0.97	1.40	2.80	2.70	2.20
13	2.10	2.10	2.00	0.97	180	0.89	0.91	0.93	1.30	1.60	2.60	2.10
14	1.30	2.30	2.20	0.98	1.20	13.00	0.96	1.00	3.00	1.30	2.80	2.90
15	1.30	2.10	2.10	0.96	1.10	1.20	1.10	1.50	2.90	3.50	2.80	1.40
16	1.80	2.00	1.60	0.92	1.10	0.98	1.30	1.10	1.60	1.60	2.70	0.99
17	1.70	2.30	0.89	0.91	1.00	1.20	0.99	10.00	4.40	1.70	2.40	0.99
18	1.70	2.20	0.88	0.95	1.00	0.89	0.98	1.50	2.30	1.40	2.30	0.82
19	1.60	2.10	0.91	0.95	1.00	0.94	1.00	1.20	1.60	1.60	4.50	0.89
20	2.40	2.30	0.90	0.90	0.92	1.90	1.00	1.50	1.20	0.89	2.80	1.20
21	1.90	2.20	0.87	0.90	0.93	17.00	1.10	1.70	1.80	0.82	1.60	1.50
22	1.90	2.10	0.88	0.91	0.88	1.50	1.30	0.96	1.60	0.99	1.90	1.10
23	2.20	1.90	0.92	0.90	0.88	0.95	1.50	1.00	3.70	1.10	1.80	1.00
24	2.30	1.90	0.90	0.90	410	1.00	1.10	1.00	1.50	4.40	2.30	1.30
25	2.60	1.90	0.86	0.91	1.10	0.97	1.10	1.00	1.90	1.50	2.10	1.40
26	2.50	1.70	0.81	0.93	1.10	0.96	1.00	1.00	1.20	2.40	2.00	1.00
27	2.50	2.00	0.86	1.10	1.10	0.91	9.80	1.20	1.40	1.90	2.80	0.85
28	3.00	2.30	0.88	1.00	0.95	0.89	33.00	1.60	1.20	1.80	3.00	0.91
29	2.00	2.30	0.87	1.10	11.00	8.60	1.90		1.20	2.30	3.20	1.10
30	1.80	2.10	0.83	1.10	1.10	8.00	0.96		1.10	1.90	2.30	1.10
31	1.20	2.20		1.10		1.20	1.10		1.20		1.40	
TOTAL	63.00	60.00	46.86	29.86	627.33	79.03	74.93	38.59	61.10	56.30	78.70	47.05
MEAN	2.03	1.94	1.56	0.96	20.91	2.55	2.42	1.38	1.97	1.88	2.54	1.57
MAX	3.0	2.3	2.6	1.1	410.0	17.0	33.0	10.0	9.1	4.4	4.5	2.9
MIN	1.2	1.1	0.8	0.9	0.8	0.8	0.9	0.8	1.1	0.8	1.4	0.8
AC-FT	124.96	119.01	92.95	59.23	1244.29	156.75	148.62	76.54	121.19	111.67	156.10	93.32

Table 3
Mean Daily Discharge Rates (cfs) at RMP Streamgages

	Santa Ana Delhi											
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
1	2.60	2.90	2.00	1.60	1.90	19.00	8.80	15.00	9.40	2.60	2.50	2.00
2	2.20	3.00	1.80	1.80	1.90	17.00	7.80	14.00	2.80	2.90	2.50	1.40
3	2.90	2.70	1.80	1.90	1.60	26.00	5.10	4.60	4.00	3.00	3.00	1.40
4	2.60	2.70	1.90	2.20	3.10	16.00	2.10	7.90	13.00	3.00	2.20	1.40
5	6.70	2.20	2.10	2.20	1.90	14.00	2.00	14.00	9.20	2.90	2.20	1.60
6	2.80	2.60	1.80	2.30	1.10	14.00	1.80	13.00	4.40	6.70	2.10	1.70
7	2.50	3.00	1.80	2.10	1.40	15.00	1.70	15.00	24.00	3.20	2.30	1.90
8	2.30	2.50	1.90	2.10	1.30	14.00	1.10	15.00	4.10	3.00	1.80	2.10
9	2.50	2.70	1.60	2.00	1.30	15.00	1.10	14.00	3.80	3.70	2.50	1.20
10	2.80	2.60	2.10	2.40	1.30	16.00	5.40	12.00	3.10	3.00	1.80	1.80
11	2.60	2.70	1.90	2.50	1.90	16.00	11.00	12.00	2.60	2.80	2.00	1.70
12	2.90	2.30	2.30	2.30	41.00	4.80	11.00	13.00	3.00	2.90	1.60	1.30
13	2.80	2.50	1.70	2.30	5.80	7.20	12.00	13.00	3.10	2.50	1.60	1.30
14	2.60	2.90	1.70	2.10	2.00	20.00	12.00	13.00	3.80	2.30	1.60	1.30
15	2.30	3.00	1.60	2.60	1.80	7.20	15.00	13.00	3.40	4.70	1.50	1.30
16	3.00	3.00	1.60	2.80	1.70	6.00	13.00	13.00	3.30	9.90	2.60	1.10
17	2.90	3.20	1.40	2.30	1.70	5.30	14.00	29.00	13.00	11.00	1.50	1.50
18	2.50	3.20	1.20	2.50	1.50	6.00	12.00	14.00	9.70	3.70	1.50	1.60
19	3.00	2.80	1.30	2.30	1.70	6.20	14.00	13.00	3.50	3.10	1.70	2.30
20	3.00	2.70	1.30	2.70	1.80	6.00	13.00	13.00	7.60	3.00	1.40	1.90
21	3.40	2.80	1.40	2.70	1.70	33.00	12.00	13.00	7.40	2.30	1.20	2.10
22	2.90	3.20	1.60	5.10	2.00	8.10	13.00	13.00	2.10	2.30	1.80	2.00
23	2.80	2.90	1.60	1.80	2.00	7.90	12.00	13.00	10.00	2.30	1.30	1.70
24	2.70	2.60	1.70	1.90	69.00	7.90	12.00	13.00	2.50	4.40	1.30	1.90
25	3.10	2.40	1.70	2.20	4.90	8.00	12.00	11.00	2.30	2.60	1.30	2.10
26	2.90	2.10	1.90	1.70	4.10	7.60	13.00	3.60	3.80	4.60	1.30	2.30
27	2.60	2.30	2.00	1.50	9.00	6.90	26.00	2.90	5.00	2.30	1.50	2.40
28	2.60	2.60	1.90	1.50	19.00	7.00	63.00	3.60	3.20	2.00	1.30	2.50
29	2.40	2.40	1.70	1.80	48.00	27.00	14.00		2.90	2.40	1.40	1.70
30	2.90	2.40	1.70	2.10	20.00	24.00	16.00		2.90	2.30	1.30	1.60
31	3.40	2.50		2.00		11.00	14.00		3.00		2.10	
TOTAL	89.20	83.40	52.00	69.30	257.40	399.10	370.90	343.60	175.90	107.40	55.70	52.10
MEAN	2.88	2.69	1.73	2.24	8.58	12.87	11.96	12.27	5.67	3.58	1.80	1.74
MAX	6.7	3.2	2.3	5.1	69.0	33.0	63.0	29.0	24.0	11.0	3.0	2.5
MIN	2.2	2.1	1.2	1.5	1.1	4.8	1.1	2.9	2.1	2.0	1.2	1.1
AC-FT	176.93	165.42	103.14	137.45	510.55	791.60	735.67	681.52	348.89	213.02	110.48	103.34

Table 4
Total Stormwater Loads from the Newport Bay Watershed

PERIOD	Vol. Storm ac-ft	Vol. Sampled ac-ft	NO3 tons	PO4 tons	TSS tons	Cu lbs	Pb lbs	Zn lbs
Peters Canyon Wash at Barranca Parkway								
Nov 24-29, 2001	148.71	164.19	6.24	0.63	50.84	16.94	5.37	68.31
Nov 29-Dec 3, 2001	64.90	98.57	3.76	0.17	8.68	2.99	0.64	10.07
Dec 14-18, 2001	47.69	87.37	4.59	0.27	12.08	2.51	0.76	13.7
Jan 27-31, 2002	300.80	303.16	10.94	1.04	46.19	15.74	3.34	38.1
Feb 17-19, 2002	71.21	76.62	4.27	0.32	10.16	4.89	0.94	14.0
Mar 7-10, 2002	57.67	78.37	4.08	0.20	6.39	4.97	0.77	10.9
Total Sampled Load		808	33.87	2.62	134.34	48.0	11.8	155.0
Annual Stormwater Volume	1,630	Site Mean EMC	29.8	2.9	597.0	44.4	18.9	155.8
Calc. Unsampled Load	822		33.2	3.3	666.5	99	42	348
Sampled+Unsampled Load			67.1	5.9	800.9	147	54	503
<hr/> Santa Ana Delhi Channel at Irvine Avenue								
Nov 29-Dec 3, 2001	228.62	210.71	0.81	0.14	8.98	13.32	3.71	33.58
Dec 14-18, 2001	31.06	73.67	0.44	0.06	2.40	3.82	0.89	11.60
Jan 27-31, 2002	208.76	224.10	1.06	0.22	18.54	16.35	6.21	50.2
Feb 17-21, 2002	66.63	138.50	0.51	0.06	0.94	4.65	0.59	9.6
Mar 7-11, 2002	47.36	66.46	0.66	0.06	1.26	4.85	0.57	9.6
Total Sampled Load		713	3.48	0.54	32.12	43.0	12.0	114.5
Annual Stormwater Volume	1,289	Site Mean EMC	7.5	2.1	220.2	41.4	33.2	185.1
Calc. Unsampled Load	576		5.9	1.7	172.4	65	52	290
Sampled+Unsampled Load			9.3	2.2	204.5	108	64	404
<hr/> San Diego Creek at Campus Drive								
Nov 29-Dec 2, 2001	157.02	153.75	3.02	0.24	12.84	7.12	1.58	21.02
Feb 17-21, 2002	236.74	289.64	12.36	0.58	17.43	17.41	1.66	22.48
Mar 7-11, 2002	230.65	256.49	7.67	0.37	11.04	19.22	1.44	25.5
Total Sampled Load		700	23.05	1.19	41.31	43.8	4.7	69.0
Annual Stormwater Volume	4,533	Site Mean EMC	17.6	4.0	1,008.5	39.0	26.6	142.6
Calc. Unsampled Load	3,833		91.7	21.0	5,253.4	406	277	1485
Sampled+Unsampled Load			114.7	22.2	5,294.7	450	282	1,554
<hr/> San Diego Creek at Harvard Avenue								
Nov 12-16, 2001	277.11	280.89	11.83	1.58	379.02	59.87	16.95	236.08
Nov 24-28, 2001	291.38	297.23	9.38	0.76	84.93	22.57	4.33	59.55
Nov 29-Dec 2, 2001	154.53	161.04	8.12	0.21	13.66	7.12	1.19	23.0
Dec 14-17, 2001	66.00	64.18	3.28	0.14	10.39	3.14	0.67	11.4
Feb 17-21, 2002	66.10	72.77	3.51	0.15	10.20	4.02	0.50	8.6
Mar 7-11, 2002	22.78	26.18	1.02	0.03	2.47	1.56	0.14	2.6
Total Sampled Load		902	37.13	2.87	500.67	98.3	23.8	341.3
Annual Stormwater Volume	1,776	Site Mean EMC	18.8	5.2	1,289.8	44.5	18.8	187.4
Calc. Unsampled Load	873		22.3	6.1	1,531.0	106	45	445
Sampled+Unsampled Load			59.4	9.0	2,031.7	204	69	786

Figures

Figure 1
Nutrient TMDL RMP Routine Monitoring Stations

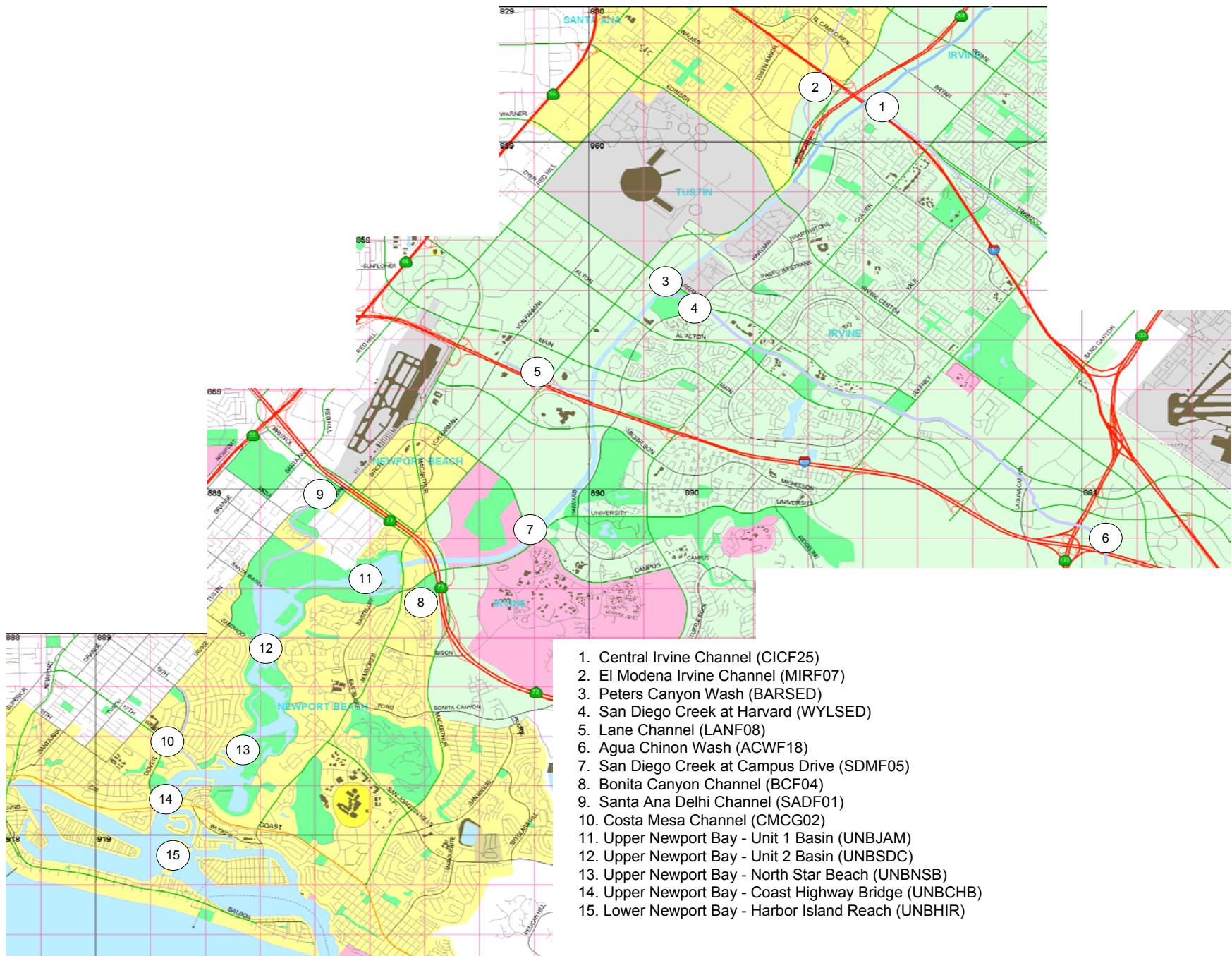


Figure 2
Mean Nitrate Nitrogen Concentrations at RMP Channels

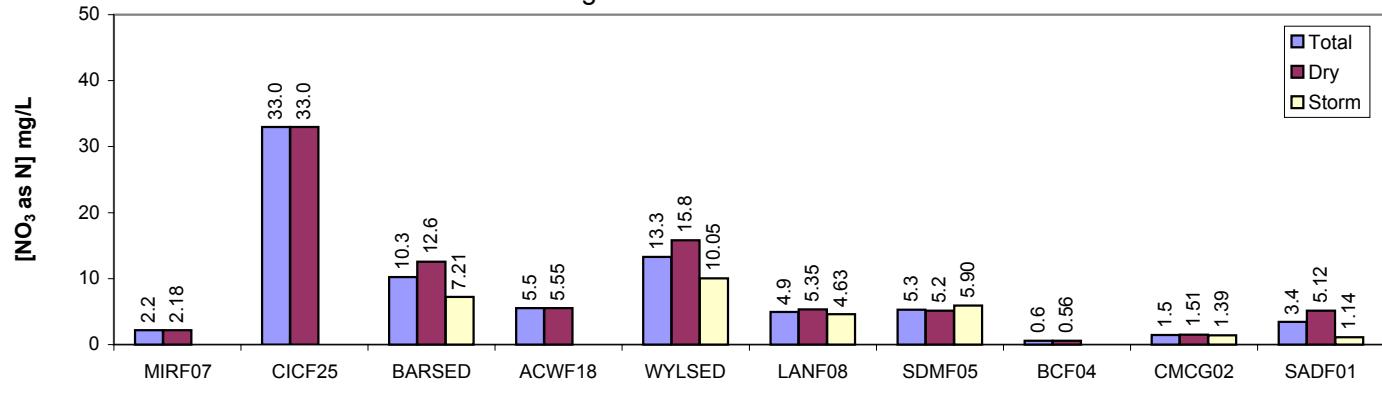


Figure 3
Mean Total Nitrogen Concentrations at RMP Channels

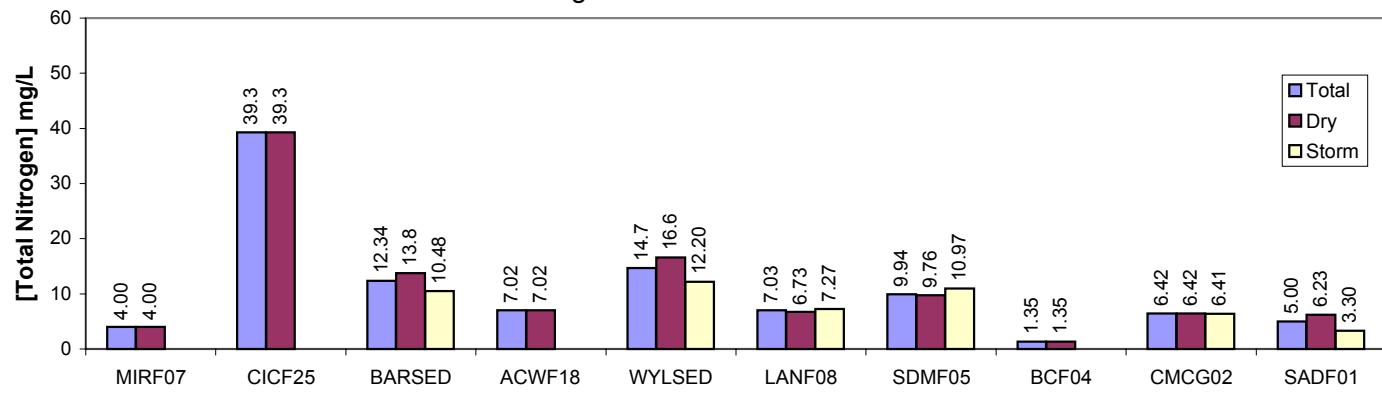
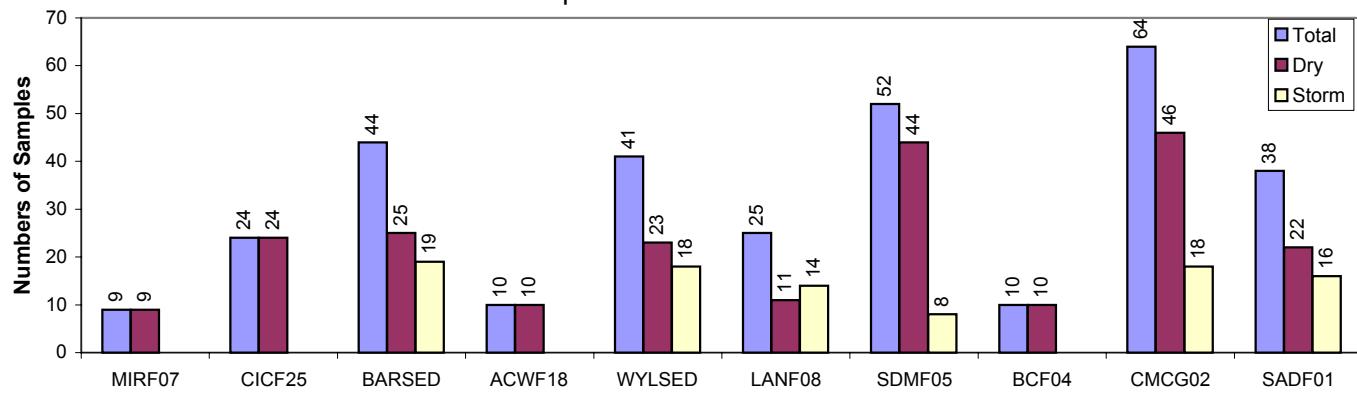


Figure 4
Numbers of Samples Collected from RMP Channels



Excluding May 2002 Nitrate Study Data

Figure 5
**Measured Daily Total Nitrogen and Total Inorganic Nitrogen
 Concentration San Diego Creek at Campus Drive**

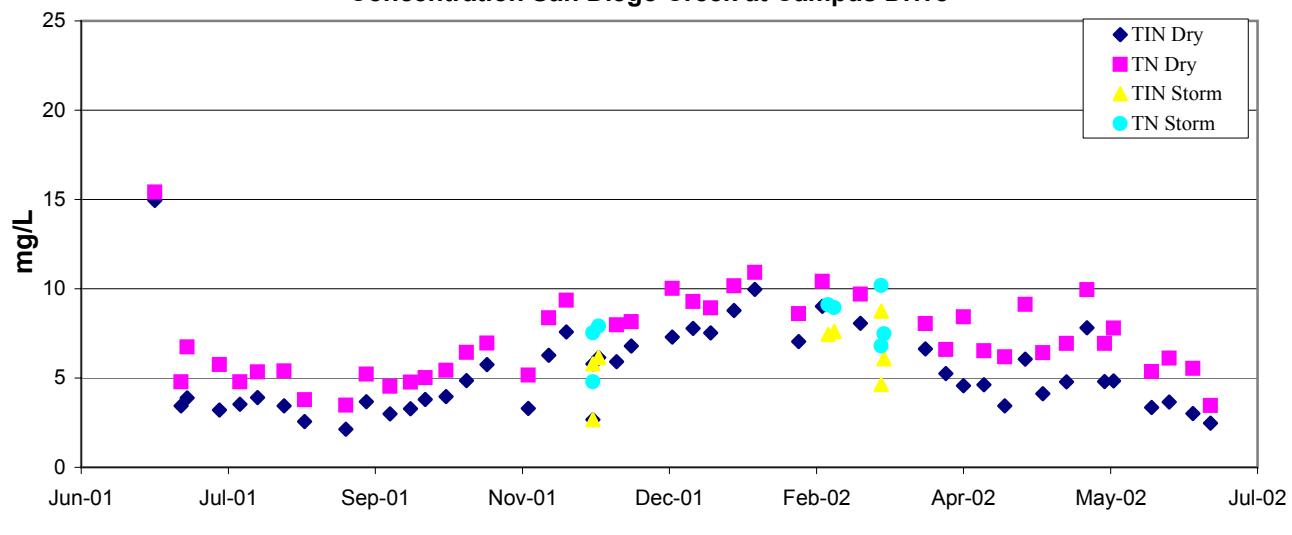


Figure 6
**Measured Daily Total Nitrogen and Total Inorganic Nitrogen
 Concentration San Diego Creek at Culver**

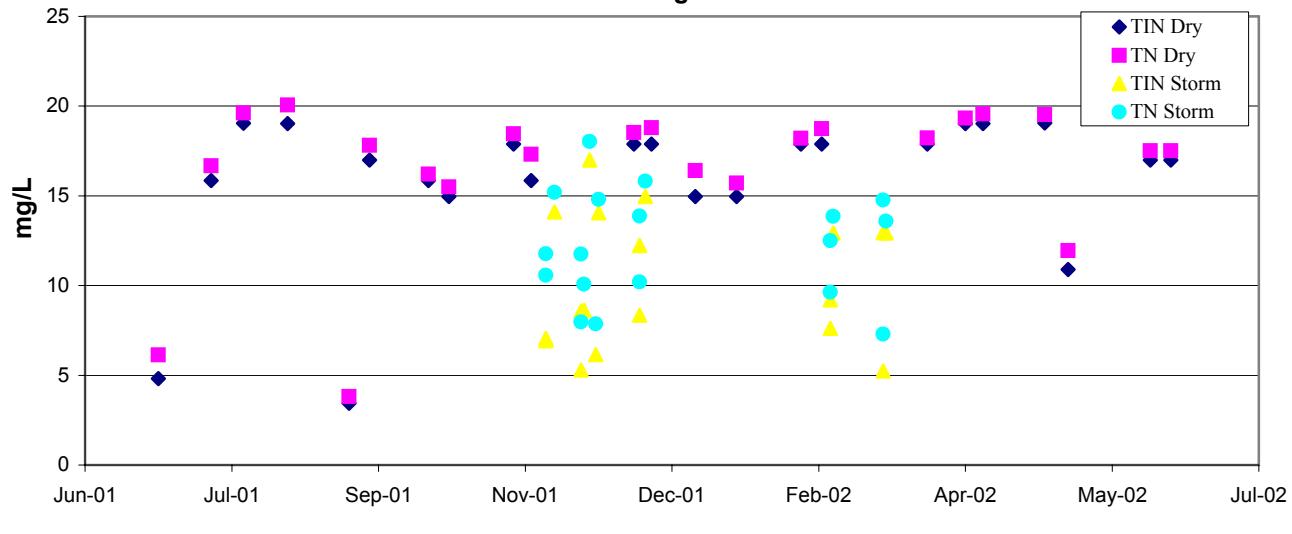


Figure 7
Mean Daily Dry-Weather Nitrogen Loads from RMP Channels
July 2001 - June 2002

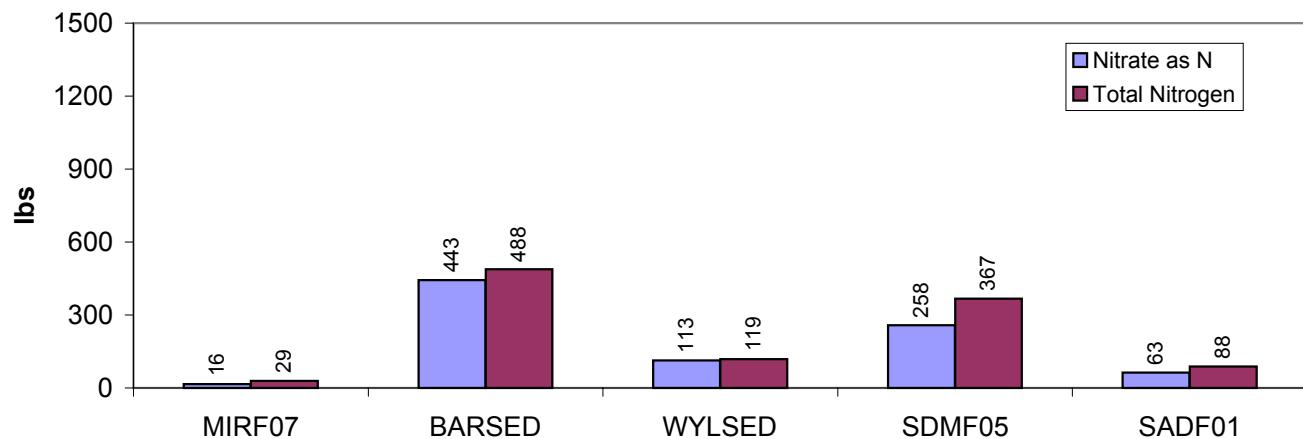


Figure 8
Measured Daily Dry-Weather Total Nitrogen Load
San Diego Creek at Campus Drive

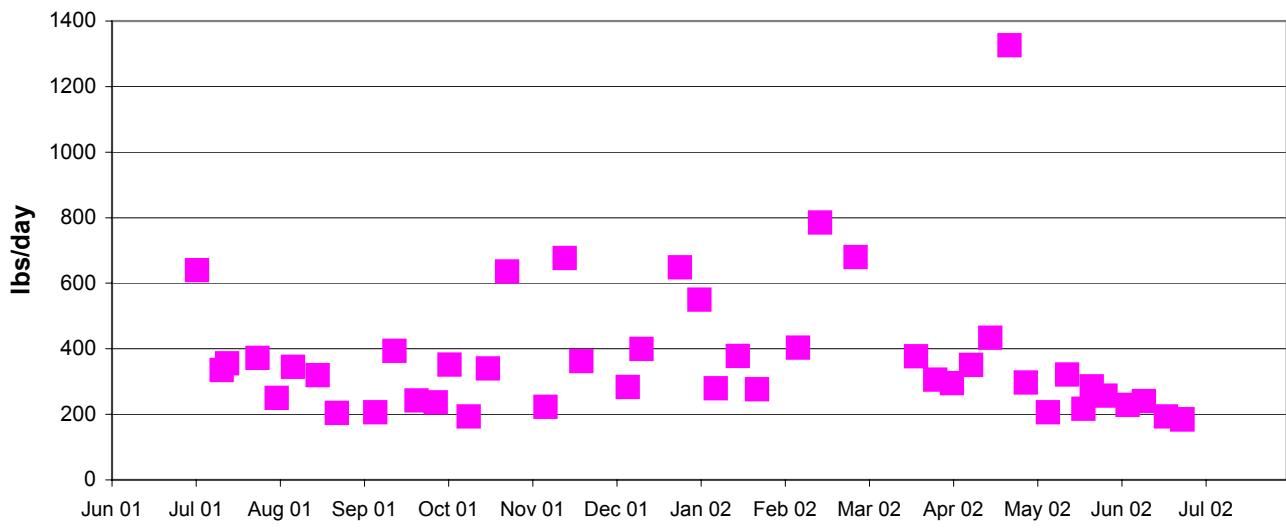


Figure 9
Average Monthly Dry-weather TN Load for San Diego Creek @ Campus
4/1 - 9/30/2001

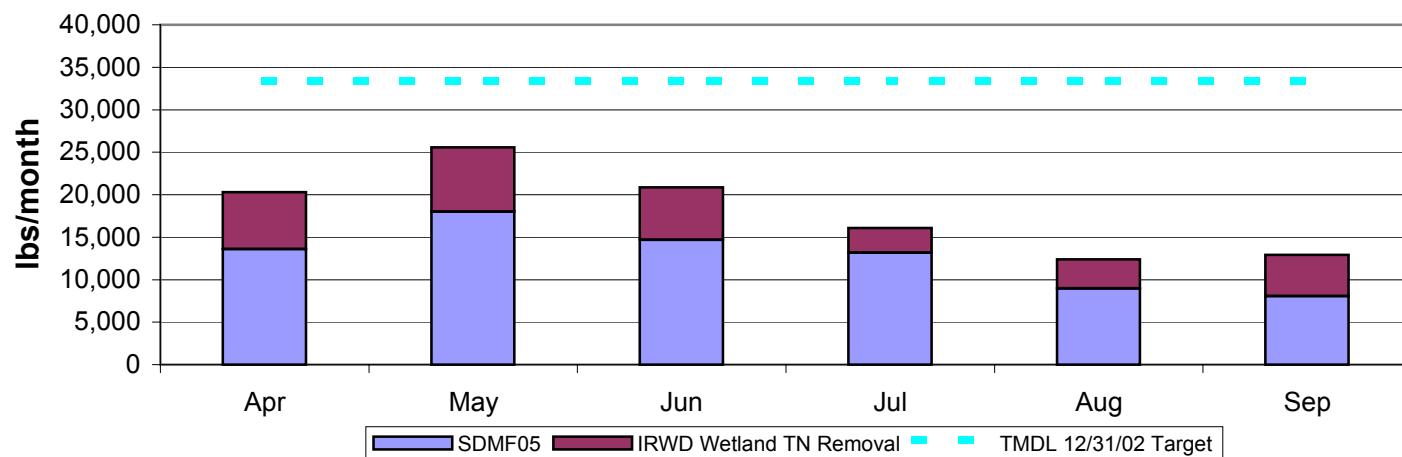


Figure 10
Average Daily Dry-weather TN Load for San Diego Creek @ Campus

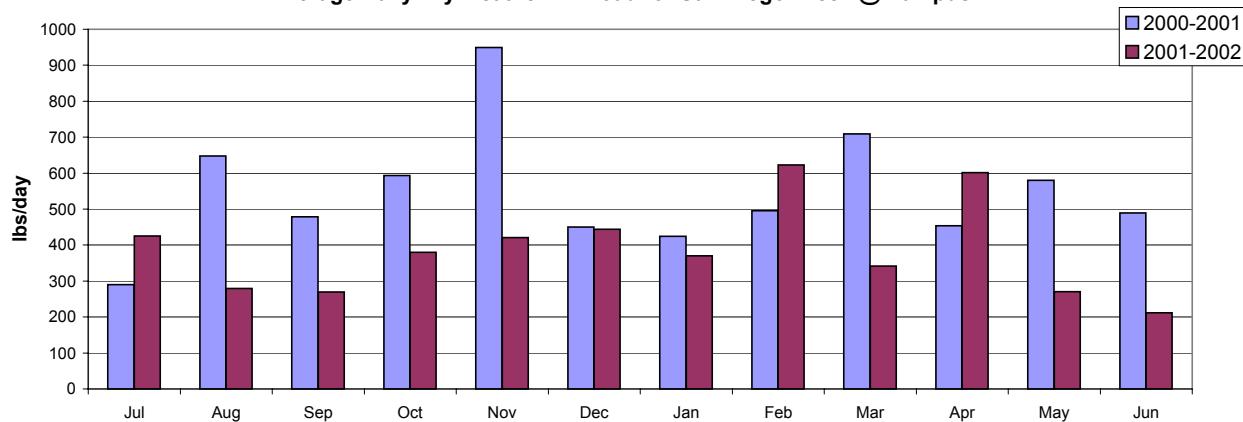


Figure 11
Average Daily Dry-weather TN Load for San Diego Creek @ Culver

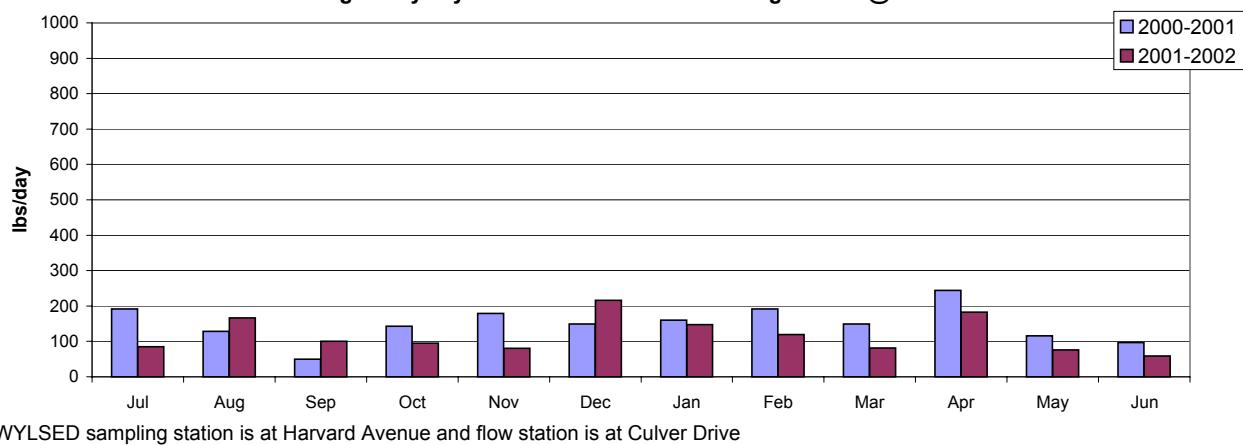


Figure 12
Average Daily Dry-weather TN Load for Peters Canyon Wash @ Barranca

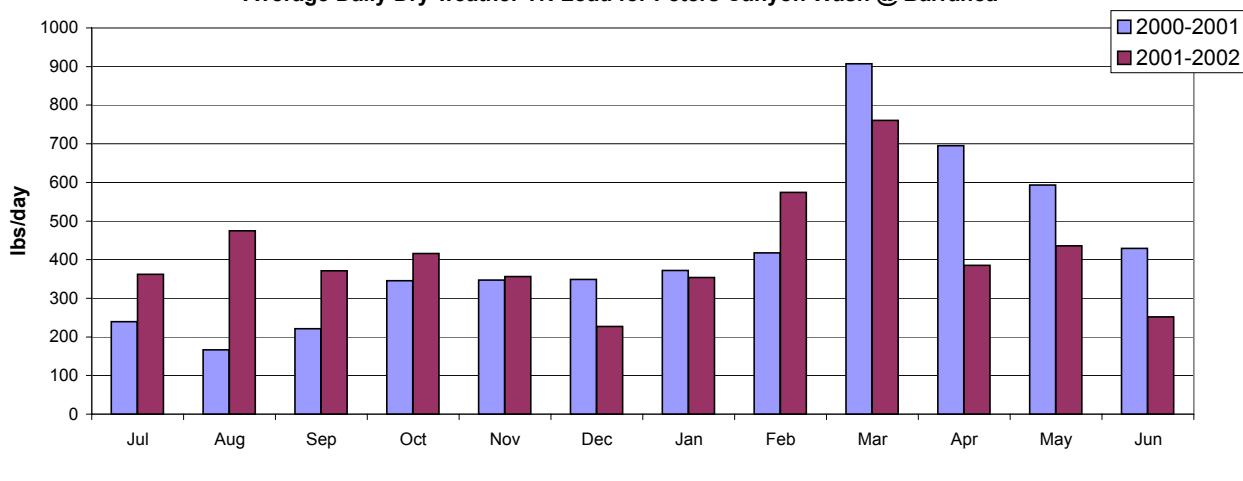


Figure 13
Average Dry Weather Concentration of Nitrate Nitrogen in Newport Bay
July 2001 - June 2002

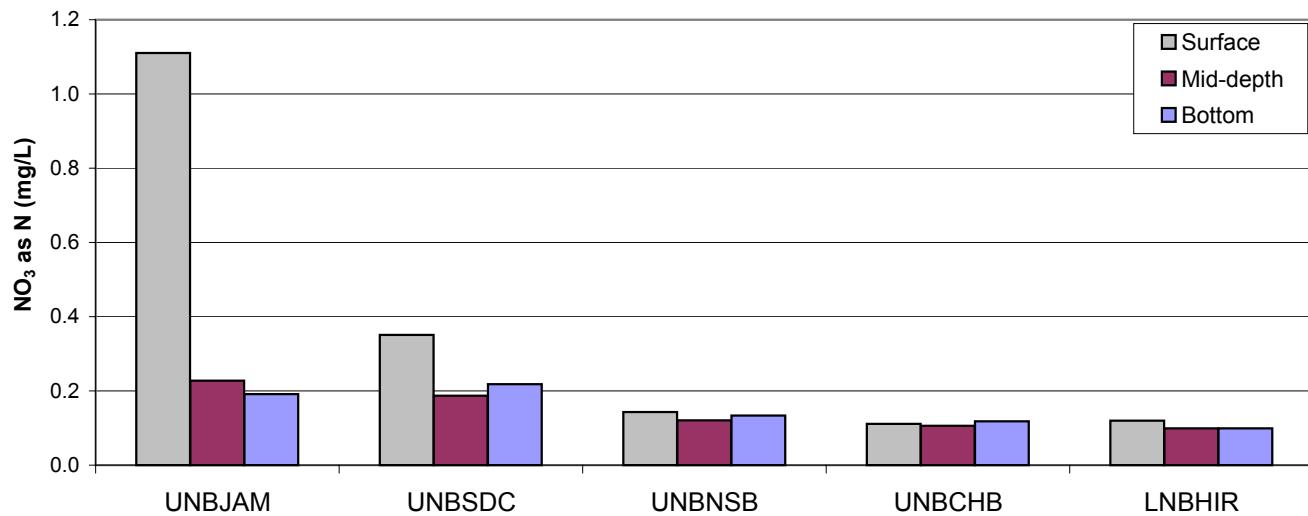
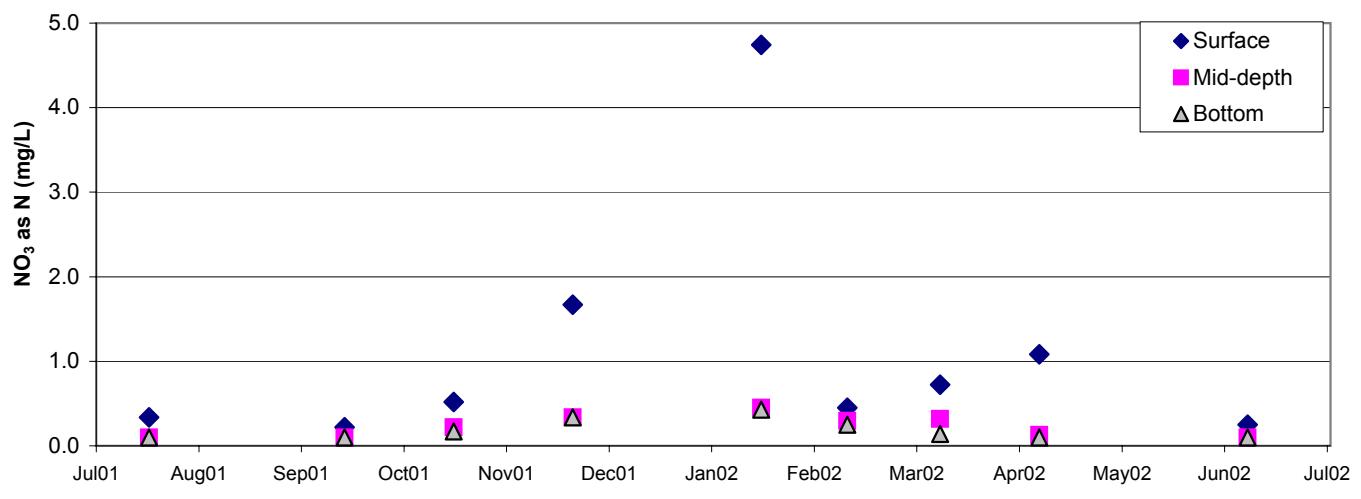


Figure 14
Dry-Weather Nitrate Nitrogen Concentrations at UNBJAM
July 2001 - June 2002



Appendix A

A Regional Nutrient Monitoring Program

for the Newport Bay Watershed - RWQCB Staff Report

A REGIONAL NUTRIENT MONITORING PROGRAM FOR THE NEWPORT BAY WATERSHED

INTRODUCTION

The Nutrient TMDL for the Newport Bay/San Diego Creek Watershed (Resolution No. 98-9, as amended by Resolution No. 98-100) requires that the Santa Ana Regional Water Quality Control Board establish and oversee a regional monitoring program (RMP) for the Newport Bay watershed. The RMP is a coordinated program to assess the attainment of the goals of the nutrient TMDL. The objectives of the monitoring program are to quantify the three endpoints of the nutrient TMDL: 1) the seasonal nutrient loading from the watershed; 2) the nutrient concentration in San Diego Creek, Reaches 1 and 2; and 3) the extent, magnitude, and duration of algal blooms in San Diego Creek and Newport Bay.

BACKGROUND

The RMP is intended to eliminate the redundancies in monitoring occurring in the Newport Bay watershed. The RMP is intended to allow all dischargers in the watershed to participate. Participation in the RMP could result in the reduction of self-monitoring requirements contained in individual Waste Discharge Requirements (WDRs) or National Pollution Discharge Elimination System (NPDES) permits.

The RMP is composed of two components: a routine monitoring component and a special monitoring component. The routine monitoring includes most of the traditional monitoring that has occurred in the watershed. The special monitoring includes special investigations into unanswered questions about nutrient sources and dynamics in the watershed.

While the RMP was originally conceived as focusing only on nutrients, the Newport Bay Watershed Water Quality Technical Workgroup has also recognized the utility of using the RMP as a framework for additional monitoring in the watershed. This is an appropriate extension of the program considering the current development of a toxic substances TMDL for the Newport Watershed by the Regional Board for adoption in 2002. Specifically, monitoring for toxic substances and toxicity would be conducted at the same sites in the Bay and watershed. A proposed toxic substances monitoring plan is included in Appendix A.

PROCEDURES AND QUALITY ASSURANCE/QUALITY CONTROL

Sampling procedures and quality assurance/quality control will follow those outlined in County of Orange, 1998b. If more than one entity or laboratory is collecting or analyzing samples, a standard sampling procedure, quality assurance/quality control, and analysis procedure will need to be developed. Additional sampling procedures and quality assurance/quality control protocols will need to be developed for algae sampling.

RATIONALE FOR STATION SELECTION

TMDL Compliance Monitoring

Compliance monitoring will quantify the three endpoints of the nutrient TMDL. The seasonal nutrient loading from the watershed will be determined from samples collected at the San Diego Creek at Campus, Santa Ana-Delhi at Irvine Ave., Bonita Canyon at San Diego Creek, and Costa Mesa Channel at Highland stations. These station locations will capture 99% of the total annual nitrogen load in the watershed based on analyses conducted during the development of the TMDL. The remaining 1% of the total annual nitrogen load, coming from the Lower Newport Bay watershed, will be determined by modeling land use and loading rates.

The nutrient concentration in San Diego Creek, Reaches 1 and 2, will be determined from samples collected at the San Diego Creek at Campus and San Diego Creek at Culver stations. These are the historical stations used to determine the concentrations in the Creek.

The extent, magnitude, and duration of algal blooms in San Diego Creek and Newport Bay will be determined by the in-bay algae and water quality monitoring program and an algae survey of the creek system.

TMDL Allocation Monitoring

Allocation monitoring will quantify the allocations of the nutrient TMDL. The currently permitted and unpermitted nurseries will sample discharges from their facilities. The agricultural discharges will be characterized by sampling stations located in three general soil zones and for different crop types. These sites are yet to be determined.

The urban allocation will be determined from samples collected at the Santa Ana-Delhi at Irvine Ave., Costa Mesa Channel at Highland, Lane Channel at Jamboree, El Modena-Irvine Channel at Michelle, and Agua Chinon Wash at Irvine Center Dr. stations.

ROUTINE MONITORING

Physicals/Nutrients

The selection of monitoring locations relied upon the historical location of monitoring stations maintained by the County of Orange, analysis of the current NPDES monitoring program (County of Orange, 1998a) and proposed revisions to that program (County of Orange, 1998b), the data used to develop the nutrient TMDL, and areas of information that were missing in the development of the TMDL.

Watershed

The watershed monitoring plan serves two of the three goals of the nutrient TMDL as well as providing compliance monitoring with TMDL load and wasteload allocations. The stations were selected based on the three main land uses associated with allocations: urban, nurseries, and agriculture. The station locations include nine stations previously monitored by the County of Orange, the three permitted nursery stations, and additional stations to be added for currently unpermitted nurseries and agricultural sites. The sites and constituents to be sampled are listed in Table 1.

In-Bay

The in-bay monitoring plan serves to address a component of the third endpoint of the TMDL, algal blooms in the Bay. The five stations are a reduction from the ten that are currently monitored by the County of Orange. The five stations are representative of the Bay based on the analysis conducted by the County of Orange (County of Orange, 1998a). The stations and constituents to be sampled are listed in Table 2.

Algae

The third endpoint of the TMDL is to determine the extent, magnitude, and duration of algal blooms in San Diego Creek and Newport Bay. The monitoring stations selected are representative sites from the stations established by Dr. Horne for the IRWD WWSP. (Alex Horne Associates, 1998). The 9 sites are distributed throughout the Upper Bay. Algae distribution in the creek system is a special monitoring priority (see next section). The stations and parameters are listed in Table 3.

SPECIAL MONITORING

Several areas and problems within the watershed need further intensive study in order to provide information to update and revise the nutrient TMDL, if necessary. The studies range from short duration, focused investigations into the nutrient loading from open space in the watershed to longer, more complex investigations, such as nutrients concentrations in Bay and Creek sediments and shallow groundwater loading to the creek system. A few of these studies would be performed each year. The monitoring priorities (not in order of priority) are:

- Aerial mapping of algae distribution
- Open space nutrient loading
- Shallow groundwater contribution to the creek system
- Algae survey of the creek system
- Nutrient concentrations in bay and creek sediments
- Quantification of beneficial use impairment of the bay
- Nutrient fluxes from bay sediments and algae
- Quantification of precipitation loading

REFERENCES

- Alex Horne Associates, 1998. Macroalgae (Seaweed) in Newport Bay-Estuaries: Spring-Summer-Fall 1998 and a comparison with 1996-97. Report to the Irvine Ranch Water District. 27p.
- County of Orange, Public Facilities and Resources Dept., 1998a. Monitoring Program Design. Report prepared for the San Diego and Santa Ana Regional Water Quality Control Boards. 36p.
- County of Orange, Public Facilities and Resources Dept., 1998b. Water Quality Sampling Plan. Report prepared for the San Diego and Santa Ana Regional Water Quality Control Boards. 10p + appendices.

Table #1 Newport Bay Watershed Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
SADF01 Santa Ana-Delhi	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Bi-monthly	24	1	24
@ Irvine Ave	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Bi-monthly	24	1	24
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
SDMF05 San Diego Creek	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Weekly	52	1	52
@ Campus	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Weekly	52	1	52
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
BCF04 Bonita Canyon	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Monthly	12	1	12
@ SDC	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
CMCG02 Costa Mesa Channel	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Monthly	12	1	12
@ Highland	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum

Table #1 Newport Bay Watershed Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
MIRF07 El Modena-Irvine Channel	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Monthly	12	1	12
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
LANF08 Lane Channel	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Monthly	12	1	12
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
ACWF18 Agua Chinon Wash	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Monthly	12	1	12
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	1	12
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness, flow	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
BARSED Peters Canyon Wash	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Bi-monthly	24	1	24
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Bi-monthly	24	1	24
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Storm	3 minimum	1	3 minimum
@ Barranca	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum

Table #1 Newport Bay Watershed Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
WYLED San Diego Creek	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Bi-monthly	24	1	24
@ Culver	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Bi-monthly	24	1	24
	Physicals	flow	Daily	NA	NA	NA
	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Storm	3 minimum	1	3 minimum
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Storm	3 minimum	1	3 minimum
Currently permitted nurseries Hines, El Modeno, Bordiers	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Weekly	52	1	52
	Physicals	Flow	Daily	NA	NA	NA
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Weekly	52	1	52
Currently unpermitted nurseries (Possibly 1 to 10)	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Weekly	52	1	52
	Flow	Flow	Daily	NA	NA	NA
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Weekly	52	1	52
Agricultural discharges (Sites to be determined)	Physicals	temp, conductivity, turbidity, Ph, DO, hardness	Irrigation/Storm	NA	NA	NA
	Flow	Flow	Daily	NA	NA	NA
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Irrigation/Storm	NA	NA	NA

Table # 2 Newport Bay Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
UNBJAM	Physicals	temp, conductivity, turbidity, Ph, DO	Monthly	12	3 (1 @ 3 depths)	36
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	3 (1 @ 3 depths)	36
UNBSDC	Physicals	temp, conductivity, turbidity, Ph, DO	Monthly	12	3 (1 @ 3 depths)	36
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	3 (1 @ 3 depths)	36
UNBNSB	Physicals	temp, conductivity, turbidity, Ph, DO	Monthly	12	3 (1 @ 3 depths)	36
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	3 (1 @ 3 depths)	36
UNBCHB	Physicals	temp, conductivity, turbidity, Ph, DO	Monthly	12	3 (1 @ 3 depths)	36
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	3 (1 @ 3 depths)	36
LNBHIR	Physicals	temp, conductivity, turbidity, Ph, DO	Monthly	12	3 (1 @ 3 depths)	36
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly	12	3 (1 @ 3 depths)	36

Table # 3 Newport Bay Algae Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
Horne # 2 (South end of Shellmaker Is)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne # 4 (South tip of Middle Is)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne # 8 (N end of Middle Is)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne # 10 (W side of the Narrows)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9

Table # 3 Newport Bay Algae Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
Horne # 12 (SW side of Unit II Basin)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne # 15 (N end of Unit II Basin, W side of Dike)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne # 18 (S side of Unit I Basin)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne # 19 (N side of Unit I Basin)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9
Horne #24 (NE side of Unit I Basin)	Physicals	temp, DO, conductivity	Monthly during season/Bi-monthly off season	9	1	9
	Nutrients	TN (nitrate, nitrite, ammonia, kjeldahl), TP(ortho)	Monthly during season/Bi-monthly off season	9	1	9
	Algae	biomass, species composition	Monthly during season/Bi-monthly off season	9	transect	9

APPENDIX A - Newport Bay Watershed Toxic Substances Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
SDMF01	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	12	1	12
Santa Ana-Delhi						
@ Irvine Ave	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	12	1	12
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8
SDMF05	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	12	1	12
San Diego Creek						
@ Campus	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	12	1	12
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8
BCF04	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	6	1	6
Bonita Canyon						
@ SDC	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	6	1	6
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8

APPENDIX A - Newport Bay Watershed Toxic Substances Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
CMCG02	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	6	1	6
Costa Mesa Channel						
@ Highland	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	6	1	6
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8
MICF07	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	6	1	6
El Modena-Irvine Channel						
@ Michelle	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	6	1	6
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8
LANF08	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	6	1	6
Lane Channel						
@ Jamboree	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	6	1	6
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8

APPENDIX A - Newport Bay Watershed Toxic Substances Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
ACWF18	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	6	1	6
Agua Chinon Wash						
@ Irvine Center Dr.	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	6	1	6
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8
BARSED	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	12	1	12
Peters Canyon Wash						
@ Barranca	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	12	1	12
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8
WYLSED	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	12	1	12
San Diego Creek						
@ Culver	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	12	1	12
	Sediment	Trace Metals, DDT, Chlordane, Toxaphene	Semi-Annually	2	1	2
	Acute Toxicity - water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Ceriodaphnia/Pimephales) water column		Seasonally (Wet/dry)	8	1	8

APPENDIX A - Newport Bay Watershed Toxic Substances Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
Currently permitted nurseries	Priority Pesticides	Chlordane, DDT, Endosulfan, Toxaphene, PCB, etc.	Bi-annually	2	1	2
Hines, El Modeno, Bordiers	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity		Bi-annually	2	1	2
Currently unpermitted nurseries	Priority Pesticides	Chlordane, DDT, Endosulfan, Toxaphene, PCB, etc.	Bi-annually	2	1	2
(Possibly 1 to 10)	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity		Bi-annually	2	1	2
Agricultural discharges	Priority Pesticides	Chlordane, DDT, Endosulfan, Toxaphene, PCB, etc.	Bi-annually	2	1	2
(Sites to be determined)	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity		Bi-annually	2	1	2

APPENDIX A - Newport Bay Toxic Substances Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
UNBJAM	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Sediment	Trace Metals, DDT, Chlordane	Semi-Annually	2	1	2
	Acute Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
UNBSDC	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Sediment	Trace Metals, DDT, Chlordane	Semi-Annually	2	1	2
	Acute Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
UNBNSB	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Organophosphate Pesticides	Diazinon, Chlorpyrifos	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Sediment	Trace Metals, DDT, Chlordane	Semi-Annually	2	1	2
	Acute Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4

APPENDIX A - Newport Bay Toxic Substances Monitoring

STATION	ANALYSIS	CONSTITUENTS	FREQUENCY	ANNUAL FREQUENCY	SAMPLES PER STATION	ANNUAL SAMPLES PER STATION
UNBCHB	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Organophosphate Pesticides	Diazinon, Chloryrifos	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Sediment	Trace Metals, DDT, Chlordane	Semi-Annually	2	1	2
	Acute Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
LNBHIR	Metals	Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, Zinc	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Organophosphate Pesticides	Diazinon, Chloryrifos	Seasonally (Wet/dry)	4	3 (1 @ 3 depths)	12
	Sediment	Trace Metals, DDT, Chlordane	Semi-Annually	2	1	2
	Acute Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
	Chronic Toxicity - (Mysids) water column		Seasonally (Wet/dry)	4	1	4
LNBRIN	Metals	Trace Metals, TBT	Semi-annually	2	3 (1 @ 3 depths)	6
	Synthetic Organics	DDT, PCB	Semi-annually	2	3 (1 @ 3 depths)	6
	Sediment	Trace Metals, DDT, PCB, TBT	Annually	1	1	1
	Acute Toxicity - (Mysids) water column		Semi-annually	2	1	2
	Chronic Toxicity - (Mysids) water column		Semi-annually	2	1	2
	Chronic Toxicity - (Rhepoxygnus) sediment		Semi-annually	2	1	2

APPENDIX B - Budget

County NPDES Monitoring				RMP							
	turbidity, NO3, NH3, TKN, TP, TSS, VSS	flow	Temp, EC, pH, DO			TN(nitrate, nitrite, ammonia, TKN), TP	flow	Temp, EC, turbidity, pH, DO, hardness	Temp, DO, EC	Algae (biomass, species composition)	
SADF01		1	9		SADF01	33	1	33			
SDMF05	61	1	61		SDMF05	61	1	61			
BCF04			12		BCF04	21	1	21			
CMCG02	61	1	61		CMCG02	21	1	21			
MICF07		1			MICF07	21	1	21			
LANF08		1	10		LANF08	21	1	21			
ACWF18			2		ACWF18	15	1	15			
CICF25	20	1	20		BARSED	33	1	33			
RCWF26	20		20		WYLED	33	1	33			
HCWF27			2		UNBJAM	36		12			
HINF28	20		20		UNBSDC	36		12			
BARSED		1			UNBNSB	36		12			
WYLED	21	1	21		UNBCHB	36		12			
UNBJAM	18		18		LNBRIN	36		12			
UNBSDC	18		18		HORNE #2	9*			9*	9	
UNBNSB	18		18		HORNE #4	9*			9*	9	
UNBCHB	18		18		HORNE #8	9*			9*	9	
LNBRIN	5		5		HORNE #10	9*			9*	9	
LNBTRUB			6		HORNE #12	9*			9*	9	
LNBHIR			8		HORNE #15	9*			9*	9	
Total Analyses	280	8	329		HORNE #18	9*			9*	9	
Cost/Analysis	\$121	\$3,440	\$86		HORNE #19	9*			9*	9	
Totals	\$33,880	\$27,520	\$28,294	\$89,694	HORNE #24	9*			9*	9	
					Total Analyses	439	9	319	0	81	
					Cost/Analysis	\$121	\$3,440	\$86		\$284	
					Totals	\$53,119	\$30,960	\$27,434	\$0	\$23,004	\$134,517
						* Price included in Algal Survey 2 ERS II labor hours including burden factor and overhead 2 weeks of ERS II labor					

Recommended Toxic Substances Monitoring										
	Cr, Cu, Pb, Hg, Se, Zn	Seawater Cr, Cu, Pb, Hg, Se, Zn	OP Pesticides	Trace metals in Sediment	Organochlorine Pesticides in Sediment	TBT	Acute Toxicity (Ceriodaphnia, fathead minnow)	Chronic Toxicity (Ceriodaphnia, fathead minnow)	Acute Toxicity (Mysids)	Chronic Toxicity (Mysids)
SADF01	12		12	2	2		4	8		
SDMF05	12		12	2	2		4	8		
BCF04	6		6	2	2		4	8		
CMCG02	6		6				4	8		
MICF07	6		6				4	8		
LANF08	6		6	2	2		4	8		
ACWF18	6		6	2	2		4	8		
BARSED	12		12	2	2		4	8		
WYLSED	12		12	2	2		4	8		
UNBJAM		12	12	2	2				4	4
UNBSDC		12	12	2	2				4	4
UNBNSB		12	12	2	2				4	4
UNBCHB		12	12	2	2				4	4
LNBRIN		6	6	1	1	1			2	2
Total Analyses	78	54	132	23	23	1	36	72	18	18
Cost/Analysis	\$88	\$103	\$300	\$50	\$180		\$250	\$250	\$250	\$250
Totals	\$6,864	\$5,562	\$39,600	\$1,150	\$4,140	\$0	\$9,000	\$18,000	\$4,500	\$4,500
								2 ERS II labor hours including burden factor and overhead		
								2 weeks of ERS II labor		

County NPDES Monitoring

	Diss & Total Ag, Cd, Cr, Cu, Ni, Pb, Zn, hardness	Diss & Total Seawater Ag, Cd, Cr, Cu, Ni, Pb, Zn	Trace metals in Sediment	PCBs, Organochlorine Pesticides in Sediment					
SADF01	9								
SDMF05	9		2	2					
BCF04	12		2	2					
CMCG02	61								
MICF07									
LANF08									
ACWF18				2					
CICF25									
RCWF26									
HCWF27				2					
HINF28									
BARSED									
WYLED			2	2					
UNBJAM		6	2	2					
UNBSDC		6	2	2					
UNBNSB		6							
UNBCHB		6							
LNBRIN		6	5	2					
LNBTRUB		6	2	2					
LNBHIR		8	2	2					
Total Analyses	182	88	19	20					
Cost/Analysis	\$60	\$75	\$50	\$180					
Totals	\$10,920	\$6,600	\$950	\$3,600	\$22,070				

Appendix B
Newport Bay Watershed Monitoring Data

RMP WATERSHED SITES
Agua Chinon Wash

STATION	DATE	TIME	SAMPLES		EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC μmhos	pH	Temp C	DO mg/L
			Type	#											Date	Time				
ACWF18	7/12/2001	8:57	D	1	970	18	8.2	4.7	<0.05	0.78	5.2	1.8	23	<10	7/12/2001	8:57	1065	8	21	9.4
	8/23/2001		D		1160	31	8.6	35	0.061	0.97	1.16	0.197	34	<10						
	9/28/2001	9:58		1	1470	12	8.1	26	0.847	1.7	2.26	0.518	15	<10	9/28/2001	9:58	1590	7.9	22.3	6.4
	10/18/2001	10:05	D	1	1050	395	8.4	11	0.444	6	15.3	0.815	490	56	10/18/2001	10:06	944	8.3	19	9.8
	11/14/2001	8:38	D	1	1980	1.6	7.4	48	0.107	0.78	1.56	0.543	<10	<10	11/14/2001	8:38	1968	7.4	16.8	3.1
	1/8/2002		D	1	1720	37	7.7	48	<0.05	1.3	<0.061	0.44	87	<10						
	2/22/2002	12:58	D	1	1170	32	8.5	11	<0.05	0.51	0.428	0.083	29	<10	2/22/2002	13:01	710	8.3	15.8	16.8
	4/25/2002	8:20	D	1	1350	1.6	7.8	29	<0.05	0.73	1.25	0.41	<10	<10	4/25/2002	8:20	1409	8.3	16.4	7.3
	5/16/2002	9:45	D	1	1310	1.6	8.5	14	0.124	0.6	1.99	0.577	<10	<10	5/16/2002	11:06	1178	8.3	18.1	7.6
	6/27/2002	8:51	D	1	1460	13	8.5	19	0.079	1.3	4.9	1.54	<10	<10	6/27/2002	8:51	1457	8	18.5	10.5

RMP WATERSHED SITES
Peters Canyon Wash at Barranca Parkway

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC μmhos	pH	Temp C	DO mg/L	
			Type	#										Date	Time					
BARSED	07/03/01	8:30	D		2140	2.9	8.7	37	<0.05	0.93	0.459	0.138	<10	<10	7/3/2001		8	25.3	10.5	
	07/23/01				2230	3	8.5	40	<0.05	0.93	0.49	0.131	<10	<10						
	08/01/01	11:10	DT		2240	3.7	8.5	57	<0.05	0.66	0.765	0.173	<10	<10	8/2/2001		2420	8.4	23.7	
	08/02/01																			
	08/16/01		D		2250	5.9	8.4	42	<0.05	0.95	0.765	0.161	<10	<10						
	09/06/01		D		2190	3.6	8.4	290	<0.05	0.77	0.796	0.235	<10	<10	9/6/2001		2280	8.1	22.7	14.4
	09/13/01				2280	5.1	8.4	34	<0.05	0.94	1.01	0.262	<10	<10						
	10/03/01	8:47	D	24	2120	5.1	8.5	38	<0.05	1.3	1.04	0.379	<10	<10	10/4/2001	8:17	1885	7.9	21.1	6.5
	10/04/01	7:47																		
	10/10/01	8:20	D	24	2030	7.1	8.5	39	<0.05	1.1	2.17	0.518	13	<10	10/11/2001	8:00	1935	7.4	19.7	4.7
	10/11/01	7:20																		
	11/01/01	7:39	D	12	2390	8.7	8.4	43	0.147	1.8	1.44	0.44	15	<10	11/2/2001		2263	7.8	18.5	7.4
	11/02/01	6:39																		
	11/07/01	7:20		12	2410	20	8.4	40	0.067	1.8	1.19	0.298	36	<10	11/8/2001		2629	8	16.5	9.7
	11/08/01	8:20																		
	11/24/01	16:08	ST	5	410	293	7.7	7.5	0.462	5.8	3.98		540	92						
	11/24/01	17:08	SF																	
	11/24/01	21:08	ST	5	940	186	7.8	25	0.461	3.2	3.37	0.567	220	32						
	11/25/01	5:08	SF																	
	11/25/01	9:28	ST	24	2210	7.1	8.3	43	0.099	1.5	1.47	0.361	<10	<10						
	11/27/01	7:28	SF																	
	11/27/01	11:28	ST	24	2780	3.2	8.3	53	<0.05	0.77	0.796	0.195	<10	<10						
	11/29/01	9:28	SF																	
	11/29/01	11:18	S	3	800	397	9.4	9.2	0.679	4.2	3.37	0.353	470	100						
	11/29/01	11:48																		
	11/29/01	13:48	ST	10	1160	80	7.9	23	0.44	2.3	1.93	0.448	85	16						
	11/30/01	7:48	SF																	
	11/30/01	9:48	ST	34	2360	6.6	8.4	48	<0.05	0.83	0.673	0.264	<10	<10						
	12/03/01	3:51	SF																	
	12/03/01	5:51	S	4	980	26	8						0.286	30	<10					
	12/03/01	11:52																		
	12/12/01	8:34	D	24	2380	3	8.3	48	<0.05	0.61	0.673	0.19	<10	<10	12/13/2001	8:13	2273	8.2	11	9.4
	12/13/01	7:34																		
	12/14/01	13:41	ST	2	930	255	8	16	0.063	4.2	2.75	0.272	340	72	12/16/2001	8:55	2200		9.9	10.2
	12/14/01	14:41																		
	12/14/01	18:41	ST	9	1240	141	8.2	33	0.318	2.5	2.88	0.552	160	21	12/18/2001		2200	9.9		10.2
	12/15/01	12:41	SF																	
	12/15/01	14:41	ST	32	2160	6.9	8.4	48	<0.05	0.84	1.41	0.353	<10	<10	12/18/2001		2329		12.9	10.7
	12/18/01	6:50	SF																	
	12/18/01	8:50	D	11	2470	3.1	8.4	5.9	<0.05	0.85	0.765	0.222	<10	<10	12/18/2001					
	12/19/01	6:50																		
	01/02/02	9:34	D	12	2480	2.1	8.4	53	<0.05	0.75	0.887	0.246	<10	<10	1/3/2002	9:30	2378	7.9	10.5	14.2
	01/03/02	8:34																		
	01/08/02	10:26	D	24	2580	2.6	8.5	57	<0.05	0.84	0.581	0.163	<10	<10	1/8/2002	10:30	2669	8.6	15.2	23.7
	01/09/02	9:26																		
	01/27/02	23:01	ST	4	383	2.1	7.9	11	0.364	8.3	3.49	0.147	<10	<10	1/29/2002	8:00	1037	7.8	10.6	9.4
	01/27/02	23:46	SF																	
	01/28/02	1:46	ST	6	879	121	7.9	25	0.446	3.5	2.66	0.518	130	18						
	01/28/02	11:46	SF																	
	01/29/02	13:46	ST	34	1630	39	8.1	39	0.311	1.9	1.47	0.413	25	<10	1/31/2002	8:14	1419	8	8.5	10.1
	01/31/02	6:04	SF																	

RMP WATERSHED SITES
Peters Canyon Wash at Barranca Parkway

STATION	DATE	TIME	SAMPLES Type	#	EC µmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements Date	Time	EC µmhos	pH	Temp C	DO mg/L	
BARSED	02/07/02	7:23	D	24	2280	5.3	8.5	48	0.224	1.1	1.16	0.348	<10	<10	2/8/2002	8:00	2307	8.1	14.5	10.7	
	02/08/02	6:23																			
	02/14/02	9:20	D	24	2230	5.4	8.6	70	0.782	2.3	1.81	0.529	<10	<10	2/15/2002	8:00	1820	8	14.4	12.3	
	02/15/02	8:20																			
	02/17/02	9:33	ST	3	795	2	7.8	29	1.28	9	4.9	0.362	<10	<10	2/18/2002	10:40	2064	7.9	16.8	12.6	
	02/17/02	10:33	SF																		
	02/17/02	12:33	ST	12	986	113	7.7	41	0.567	2.9	3.06	0.665	130	18							
	02/18/02	10:33	SF																		
	02/18/02	12:33	ST	21	1960	5.5	8.3	48	<0.05	1.1	1.77	0.442	<10	<10	2/21/2002	8:18	2380	7.9	14.3	11.4	
	02/19/02	8:33	SF													2/20/2002	8:26	2096	7.8	13.9	12.6
	03/07/02	8:24	ST	5	971	178	8	29	0.877	5.9	3.37	0.349	330	64	3/8/2002	9:21	1438	7.7	16.5	10.1	
	03/07/02	9:24	SF																		
	03/07/02	12:24	ST	13	1290	48	8.1	31	0.193	2.1	1.77	0.422	50	11	3/10/2002	9:30	2229	8	20.9	7.3	
	03/08/02	12:45	SF																		
	03/08/02	14:45	ST	25	2130	3.6	8.4	48	0.168	1.2	1.62	0.442	<10	<10	3/12/2002	8:40	2250	7.9	17.6	9.1	
	03/10/02	14:45	SF																		
	03/22/02	9:40	D	1	2460	4.2	8.3	84	1.1	1.5	1.74	0.534	<10	<10	3/22/2002	10:16	2476	8.4	17.3	15.7	
	04/04/02	14:10	D	19	2390	2.6	8.7	57	<0.05	1.2	0.704	0.173	<10	<10	4/5/2002	7:10	2400	7.9	15.2	10.5	
	04/05/02	7:10																			
	04/10/02	13:20	D	8	2030	3.2	8.7	40	0.053	0.78	0.122	0.107	<10	<10	4/11/2002	11:56	1786	8	18.2	11.8	
	04/11/02	9:20																			
	05/01/02	7:39	D	24	2430	2.4	8.5	48	0.249	1.6	0.826	0.198	<10	<10	5/2/2002	8:55	2362	8.1	17.6	14.8	
	05/02/02	6:39																			
	05/09/02	7:00	D	24	2530	9	8.7	42	0.103	1.1	0.612	0.125	<10	<10	5/10/2002	10:23	2325	8.1	20.7	23.2	
	05/10/02	6:00																			
	05/25/02	10:00	D	24	2390	6.4	8.5	44	0.181	1.6	0.673	0.139	10	<10							
	05/25/02	10:00	D	24	2370	4.1	8.4	53	0.196	1.6	0.734	0.164	<10	<10							
	05/26/02	9:00																			
	05/26/02	9:00																			
	05/27/02	10:00	D	24	2380	3.4	8.4	79	0.942	2.9	1.04	0.227	<10	<10							
	05/27/02	9:00																			
	05/27/02	10:00	D	24	2250	8.6	8.5	70	0.646	2.6	0.704	0.129	27	11							
	05/28/02	9:00																			
	05/28/02	10:00	D	24	2300	13	8.5	62	0.588	2.5	0.826	0.1	44	13							
	05/29/02	9:00																			
	05/29/02	10:00	D	24	2270	10	8.5	41	0.278	1.9	0.643	0.077	33	10							
	05/30/02	9:00																			
	05/30/02	10:00	D	24	2420	6.6	8.4	62	0.317	1.8	0.459	0.089	25	<10							
	05/31/02	9:00																			
	06/06/02	10:30	D	24	2280	3	8.5	29	0.073	1.2	0.765	0.131	10	<10	6/6/2002	10:30	2315	8.4	25.7	21.7	
	06/07/02	9:30																			
	06/13/02	9:45	D	1	2340	10	8.4	44	0.057	1.1	0.796	0.204	19	<10	6/13/2002	11:06	2277	8.1	22.1	21.6	

RMP WATERSHED SITES
Bonita Canyon Wash

STATION	DATE	TIME	SAMPLES		EC µmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L	
			Type	#											Date	Time					
BCF04	07/26/01	10:06	D	1	3340	36	8.1	7.9	<0.05	0.64	0.52	0.458	66	<10	7/26/2001		3260	8.1	19.8	8	
	08/07/01		D		2780	15	8	4.6	<0.05	0.5	0.704	4.27	23	<10							
	10/04/01	8:52	D	1	2720	57	8.1	2.3	<0.05	0.65	1.35	0.212	100	14	10/4/2001	8:52	2380	8	18.8	8.6	
	11/14/01	9:59	D	1	2230	35	8	1.6	<0.05	0.92	0.337	0.114	66	<10	11/14/2001	9:59	2365	7.9	13.9	9.3	
	12/07/01	11:30	D	1	2630	8.6	8.2	1.8	<0.05	0.48	0.184	0.063	11	<10	12/7/2001	11:30	2850	8.3	10.7	10.5	
	01/08/02		D	1	3240	0.8	8.1	1.9	<0.05	1.9	0.245	0.053	<10	<10							
	03/01/02	9:43	D	1	2490	6.1	8.2	<0.44	<0.05	0.73	0.337	0.05	<10	<10	3/1/2002	10:46	2749	8.3	15.11	12.3	
	04/25/02	9:46	D	1	2100	3.6	8	1.3	<0.05	0.7	0.275	0.075	<10	<10	4/25/2002	11:16	3105	8	19.1	15.4	
	05/22/02	10:10	D	1	2970	37	8	1.3	<0.05	0.39	0.398	0.104	66	13	5/22/2002	10:10	2416	7.8	15.3	8.4	
	06/21/02	8:25	D	1	3070	12	8	1.8	<0.05	1	0.765	0.116	17	<10	6/21/2002	8:34	3692	7.8	19.1	4.1	

RMP WATERSHED SITES
Central Irvine Channel - NPDES Station

STATION	DATE	TIME	SAMPLES	EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC μmhos	pH	Temp C	DO mg/L		
			Type											Date	Time						
CICF25	07/11/01	9:38	D	1630	79	8.3	53	0.091	5.1	5.81	1.46	110	22	7/12/2001		1714	8.7	23.9	15		
	07/12/01																				
	07/25/01		D	2060	51	8.2	220	6.59	8.2	10.1	3.16	57	18								
	07/26/01																				
	08/07/01		D	1990	49	8.2	240	9.68	8	9.18	2.81	62	16								
	08/23/01		D	1790	358	9.2	120	0.515	2	3.06	0.467	570	88								
	09/13/01		D	1830	68	8.3	120	1.41	4.2	6.12	1.56	95	18								
	09/27/01	10:31	D	1760	31	8.1	120	1.46	4.1	7.65	2.4	31	<10	9/28/2001		1600	8.5	24.6	13.5		
	09/28/01																				
	10/17/01	7:45	D	24	1400	163	8.3	35	0.129	2.8	4.59	0.745	200	28	10/18/2001		1485	8.8	23.2	15	
	10/18/01	6:45																			
	10/24/01	8:13	D	12	1600	177	8.3	57	0.886	2.8	6.12	1.43	200	26	10/25/2001		1373	9.1	25	17	
	10/25/01	7:13																			
	11/20/01	9:55	D	24	1780	64	8.4	100	3.57	5.2	13.5	3.61	54	<10	11/20/2001	8:05		9.1	15.4	6.8	
	11/21/01	8:55																			
	12/26/01	10:46	D	1	1560	20	8.6	92	0.751	2.7	6.73	1.77	14	<10	12/26/2001	10:46	1490	12	12.9		
	01/08/02	10:00	D	24	1840	32	8.3	190	10.3	14	9.49	2.09	18	<10	1/8/2002		1876	8.7	14.6	16.6	
	01/09/02	9:00																			
	01/16/02	8:45	D	24	1760	37	8.2	180	3.34	7.5	7.96	2.4	22	<10	1/17/2002		1624	9	16.9	15.7	
	01/17/02	7:45																			
	02/22/02	13:18	D	1	1790	136	8.4	220	21.2	11	12.7	3.17	110	16	2/22/2002	13:18	1010	8.3	23.4	18.8	
	02/28/02	7:15	D	12	1930	92	8.1	220	2.71	0.99	9.49	2.69	69	11	3/1/2002	8:29	1904	8.6	16.1	17.8	
	03/01/02	6:15																			
	03/14/02	8:48	D	24	1830	153	8.1	170	0.817	4.2	8.87	2.37	160	20	3/15/2002	10:22	1746	8.4	18	16	
	03/15/02	7:48																			
	03/29/02	9:08	D	1	1850	27	8.7	120	<0.05	2.1	5.81	1.47	15	<10	3/29/2002	9:15	1882	8.5	14.17	15.6	
	04/18/02	14:02	D	1	2200	286	8	75	25.6	22	18.4	4.65	310	42		4/18/2002		2272	8.2	24.6	11.12
	04/25/02	8:53	D	1	1980	296	7.8	210	<0.05	5.6	11	3.77	330	28	4/25/2002	8:54	1699	8.1	15.9	12	
	05/16/02	10:28	D	1	1810	20	8.9	88	0.153	1.8	4.59	1.37	10	<10	5/16/2002	10:28	1697	8.6	19.5	10.7	
	05/22/02	9:20	D	1	2170	43	8	230	12.3	9.7	13.2	4.01	22	<10	5/22/2002	9:20	1772	7.6	15.5	10.5	
	05/25/02	10:00	D	24	1910	79	7.9	210	10.6	9.2	6.73	1.74	110	17							
	05/25/02	10:00	D	24	2210	283	7.6	290	16	19	9.79	1.95	450	64							
	05/26/02	9:00																			
	05/26/02	9:00																			
	05/26/02	10:00	D	24	2480	263	7.4	370	21.4	26	9.79	2.13	440	68							
	05/26/02	10:35	D	1	1410	13	8.6	190	9.1	5.5	5.81	1.57	<10	<10							
	05/27/02	9:00																			
	05/27/02	10:00	D	24	2130	110	7.6	630	9.6	7.5	7.34	1.95	200	30							
	05/28/02	9:00																			
	05/28/02	10:00	D	24	1800	48	8.1	230	5.9	8.5	5.51	1.39	77	13							
	05/29/02	9:00																			
	05/29/02	10:00	D	8	2080	292	7.7	300	11	10	8.57	1.43	430	68							
	05/30/02	9:00																			
	05/30/02	10:00	D	24	2040	122	8	310	12	12	7.04	1.76	180	28							
	05/31/02	9:00																			
	06/11/02	16:00	D	6	2410	182	8.7	280	0.485	6.3	5.51	0.475	350	74							
	06/11/02	21:00																			
	06/11/02	22:00	D	6	1680	348	8.2	88	0.398	7.8	8.87	1.38	580	120							
	06/12/02	3:00																			
	06/12/02	4:00	D	6	1960	440	8.2	170	0.542	7.4	10.1	1.5	780	140							

RMP WATERSHED SITES
Central Irvine Channel - NPDES Station

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC μmhos	pH	Temp C	DO mg/L
			Type	#										Date	Time				
CICF25	06/12/02	9:00																	
	06/12/02	10:00	D	4	1800	640	8.3	130	0.562	9.6	17.7	1.29	920	160					
	06/12/02	15:00																	
	06/12/02	16:00	D	3	2030	3840	8.1	160	0.716	9.2	29.1	0.763	6900	1100					
	06/12/02	21:00																	
	06/12/02	22:00	D	5	1910	271	7.9	150	0.34	8	9.18	1.83	390	64					
	06/13/02	3:00																	
	06/13/02	4:00	D	6	1780	118	8.1	130	0.104	4.3	6.12	1.66	170	31					
	06/13/02	9:00																	
	06/18/02	10:00	D	6	1430	118	9.1	92	1.25	5.8	5.51	0.301	180	34					
	06/18/02	15:00																	
	06/18/02	16:00	D	4	1880	125	8.9	160	1.16	9.7	4.59	0.554	190	40					
	06/18/02	21:00																	
	06/18/02	22:00	D	6	1780	195	8	110	1.9	9.5	9.79	1.31	320	68					
	06/19/02	3:00																	
	06/19/02	4:00	D	5	2120	187	8	160	1.09	5.9	9.18	1.56	270	56					
	06/19/02	9:00																	
	06/19/02	10:00	D		1900	106	8.4	140	0.557	3.9	5.51	0.791	140	25					
	06/19/02	15:00																	
	06/19/02	16:00	D		1980	47	8.2	200	5.01	8.6	3.98	0.817	49	12					
	06/19/02	21:00																	
	06/19/02	22:00	D		1990	60	7.9	160	3.18	4.7	5.51	1.44	80	16					
	06/20/02	3:00																	
	06/20/02	4:00	D		2010	21	8	140	0.456	2.3	4.28	0.762	20	<10					
	06/20/02	9:00																	
	06/20/02	10:00	D	6	1870	18	9.2	110	0.175	3.4	2.17	0.493	20	<10					
	06/20/02	15:00																	
	06/20/02	16:00	D	6	1880	14	9.4	100	0.158	3.1	1.68	0.301	16	<10					
	06/20/02	21:00																	
	06/20/02	22:00	D	6	1750	46	8.3	70	0.24	4.4	4.28	0.904	53	11					
	06/21/02	3:00																	
	06/21/02	4:00	D	6	1850	32	8	110	0.252	3.5	5.51	1.65	32	<10					
	06/21/02	9:00																	
	06/21/02	10:00	D	6	1940	99	8.8	120	0.188	4.8	4.9		140	27					
	06/21/02	15:00																	
	06/21/02	16:00	D	6	2020	34	9.1	110	0.148	3.2	2.51		43	10					
	06/21/02	21:00																	
	06/21/02	22:00	D	6	2040	72	7.9	120	0.126	3.5	5.51		100	20					
	06/22/02	3:00																	
	06/22/02	4:00	D	6	1980	23	8	100	0.131	3.1	4.59		21	<10					
	06/22/02	9:00																	
	06/22/02	10:00	D		2120	353	8.2	120	0.544	7.8	8.57		530	80					
	06/22/02	15:00																	
	06/22/02	16:00	D	4	2110	275	8.1	120	0.57	7.3	7.04		460	64					
	06/22/02	21:00																	
	06/22/02	22:00	D		1810	158	8	84	0.236	4.3	5.81		240	34					
	06/23/02	3:00																	
	06/23/02	4:00	D		1790	101	8	84	0.284	4	5.81		150	24					
	06/23/02	9:00																	
	06/23/02	10:00	D	6	1840	126	8.5	88	0.161	3.7	4.59	0.84	<10	30					
	06/23/02	15:00																	

RMP WATERSHED SITES
Central Irvine Channel - NPDES Station

STATION	DATE	TIME	SAMPLES		EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC μmhos	pH	Temp C	DO mg/L				
			Type	#											Date	Time								
CICF25	06/23/02	16:00	D	6	1930	75	8.7	97	0.125	3.6	3.67	0.69	100	14										
	06/23/02	21:00																						
	06/23/02	22:00	D	6	2010	29	8.1	88	0.136	2.9	3.67	0.887	40	<10										
	06/24/02	3:00																						
	06/24/02	4:00	D	6	1750	46	8.1	53	0.097	2.8	4.28	1.25	81	16										
	06/24/02	9:00																						

RMP WATERSHED SITES
Costa Mesa Channel

STATION	DATE	TIME	SAMPLES Type	#	EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements Date	Time	EC μmhos	pH	Temp C	DO mg/L	
CMCG02	07/03/01		D																		
	07/03/01	9:35	DT		931	4.3	8.6	<0.44	0.064	1.7	1.59	0.404	<10	<10	7/3/2001		902	8.6	23.1	8.5	
	07/04/01		DF																		
	07/12/01		D																		
	07/12/01	10:42	DT		986	7.2	8.4	0.46	<0.05	2.1	1.22	0.293	<10	<10	7/12/2001	10:42	1137	8.5	24.7	11.2	
	07/13/01																				
	07/18/01		D	1																	
	07/19/01		DT		1040	5	8.6	0.6	<0.05	2	1.13	0.272	<10	13							
	07/20/01		DF																		
	07/26/01		D	1																	
	07/25/01	13:10	DT		1040	5.1	8.5	0.48	<0.05	1.7	0.979	0.359	<10	<10	7/26/2001		810	9.7	29.6	12.6	
	07/26/01		DF																		
	08/02/01																				
	08/02/01		DT	1	1200	7.7	8.4	<0.44	0.1	1.5	1.1	0.26	16	10							
	08/02/01		DF																		
	08/07/01		D	1																	
	08/07/01		DT		1190	17	8.4	0.94	0.718	1.9	1.53	0.352	33	17							
	08/16/01		D	1																	
	08/15/01		DT	24	834	9.5	8.3	2.5	0.063	1.7	1.44	0.338	12	<10							
	08/16/01		DF																		
	08/23/01		D	1																	
	08/22/01		DT	24	912	12	9.9	<0.44	0.111	1.4	1.19	0.136	21	12							
	08/23/01		DF																		
	08/27/01		DT																		
	08/28/01		DF																		
	09/06/01		D																		
	09/05/01		DT		958	5.2	8.2	240	0.363	2.8	1.68	0.466	10	<10	9/6/2001			8.9	22.06	9.6	
	09/06/01		DF																		
	09/13/01		D																		
	09/12/01		DT		808	12	9.1	<0.44	0.198	2.7	1.56	0.316	20	11							
	09/13/01		DF																		
	09/21/01		D																		
	09/20/01		DT		1050	7.4	8.4	1.6	0.451	2.3	1.25	0.294	11	<10							
	09/21/01		DF																		
	09/28/01		D	1																	
	09/27/01	12:34	DT		963	4.9	8.3	1.2	0.839	2.2	1.87	0.471	<10	<10	9/28/2001		875	9.2	28.2	14	
	09/28/01		DF																		
	10/04/01	9:41	D	1																	
	10/03/01	9:36	DT	24	1000	7.6	8.6	1.5	0.621	5	1.9	0.464	12	<10	10/4/2001	10:26	769	8.5	20.8	12.2	
	10/04/01	8:36	DF																		
	10/11/01	9:36	D	1																	
	10/10/01	8:32	DT	24	956	8.3	8.8	0.57	0.223	3.1	1.56	0.289	15	<10	10/11/2001	9:36	715	8.3	19.7	12.7	
	10/11/01	9:32	DT	24																	
	10/11/01	8:32	DF																		
	10/18/01	13:50	D	1												10/18/2001	13:50	783	9.7	28	15.2
	10/17/01	9:02	DT	24	844	79	9.3	1.1	0.261	7.4	2.85	0.23	170	70							
	10/18/01	8:02	DF																		
	10/16/01		DT	1																	
	10/23/01	11:00	DT	1																	
	10/25/01	12:20	DT	1																	

RMP WATERSHED SITES
Costa Mesa Channel

STATION	DATE	TIME	SAMPLES	EC	Turb	pH	NO3	NH3	TKN	PO4	o-PO4	TSS	VSS	Field Measurements	EC	pH	Temp	DO		
			Type	#	μmhos	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Date	Time	μmhos	C	mg/L		
CMCG02	10/25/01	12:20	DT	1	1000	12	9.2	<0.44	0.115	1.9	1.07	0.239	15	<10	10/25/2001	12:20	1067	9.2	21.3	18.1
	10/25/01	12:20	DF																	
	11/02/01			1																
	11/01/01	8:49	DT	12	1410	26	8.5	3.1	0.091	3.9	2.85	0.44	60	25	11/2/2001		1059	8.3	17.8	14.6
	11/02/01	7:49																		
	11/01/01		DT	12																
	11/02/01																			
	11/18/01		D	1																
	11/07/01	9:20	DT	12	982	6.2	8.5	3.4	0.245	4.8	1.9	0.507	<10	<10	11/8/2001		967	8.8	18.1	10.5
	11/08/01	8:20	DF																	
	11/14/01		D	1																
	11/14/01	10:21	DT	1	970	7.3	9	9.7	<0.05	1.1	1.16	0.293	<10	<10	11/14/2001	10:21	551	9	18.6	13.7
	11/14/01	10:21	DF	1																
	11/20/01		D																	
	11/20/01	9:00	DT	24	830	7.4	8.9	1.7	0.373	1.9	1.04	0.262	<10	<10	11/20/2001	11:25	645	9.7	190	6.3
	11/21/01	10:00																		
	11/24/01	14:25	S	5																
	11/24/01	15:25																		
	11/24/01	18:25	ST	31	390	26	7.9	8.4	0.101	2.6	1.68	0.443	17	<10						
	11/27/01	8:25																		
	11/27/01	10:25	S	16	865	15	8.3	1.8	<0.05	1.4	1.5	0.282	<10	<10						
	11/28/01	16:25																		
	11/29/01	9:15	ST	5	460	71	8	4.3	0.505	3	1.77	0.291	120	56						
	11/29/01	10:15	SF																	
	11/30/01	7:23	ST	18	705	6.2	8.9	3.5	<0.05	1.1	0.826	0.202	<10	<10						
	12/01/01	17:27	SF																	
	12/01/01	19:27	ST	17	860	5.5	8.6	1.8	<0.05	2.2	0.337	0.126	<10	<10						
	12/03/01	3:23	SF																	
	12/07/01		D	1																
	12/07/01		DT	1	880	8.4	9.4	1.1	<0.05	3	1.29	0.267	<10	<10						
	12/07/01		DF	1																
	12/13/01	10:38	D	1																
	12/12/01	9:57	DT	24	895	11	8.6	2.2	<0.05	1.3	1.1	0.265	<10	<10	12/13/2001	10:38	478	8.8	14.2	15.5
	12/13/01	8:57	DF																	
	12/14/01	13:17	ST	5	405	144	7.3	9.8	3.1	15	4.9		210	100	12/16/2001	10:30	707		12.7	19.9
	12/14/01	14:17	SF																	
	12/14/01	16:17	ST	19	430	25	7.8	7.9	1.06	3	2.11	0.5	13	<10	12/18/2001		707		12.7	19.9
	12/16/01	4:17	SF																	
	12/16/01	10:26	ST	24	760	8.8	8.9	3.5	0.115	1.5	0.918	0.235	<10	<10	12/18/2001		535		16.5	9.5
	12/18/01	8:26	SF																	
	12/19/01		D	1																
	12/18/01	10:26	DT	11	830	4.5	8.9	4.2	0.098	1.3	1.13	0.293	<10	<10						
	12/19/01	8:26	DF																	
	12/21/01	7:15	DT	1																
	12/21/01	7:15	DF																	
	12/26/01	11:45	D	1																
	12/26/01	11:45	DT	1	630	2.6	9.7	1.3	0.101	1.9	3	0.734	<10	<10	12/26/2001	11:45	598		16.5	12.7
	12/26/01	11:45	DF	1																
	01/03/02	11:01	D	1																
	01/02/02	8:45	DT	12	697	3.1	9.2	1.5	0.108	1.7	0.612	0.138	<10	<10	1/3/2002	11:01	555	9.9	16.2	28
	01/03/02	7:45	DF																	

RMP WATERSHED SITES
Costa Mesa Channel

STATION	DATE	TIME	SAMPLES	Turb	pH	NO3	NH3	TKN	PO4	o-PO4	TSS	VSS	Field Measurements	EC	pH	Temp	DO		
			Type #	μmhos	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Date	Time	μmhos	C	mg/L		
CMCG02	01/08/02	12:45	D 1																
	01/08/02	12:40	DT 22	714	33	9.1	0.92	<0.05	1.9	1.32	0.276	18	12	1/8/2002	12:45	593	10.5	20.6	20.7
	01/09/02	11:40	DF																
	01/17/02		D 1																
	01/16/02	9:40	DT 24	663	5.5	8.9	3.1	0.107	2.2	0.704	0.15	<10	<10	1/17/2002		620	10.2	19.2	18.8
	01/17/02	8:40	DF																
	01/24/02	9:50	D 1																
	01/23/02	9:25	DT 24	838	12	9	1.1	0.067	1.5	0.826	0.171	<10	<10	1/24/2002	11:56	1154	8.7	13.2	16.3
	01/24/02	8:25	DF																
	01/27/02	21:09	ST 5	432	156	7.2	7.4	0.688	14	3.61	0.197	230	110	1/29/2002	9:24	221	8.7	11.5	11.6
	01/27/02	22:09	SF																
	01/28/02	0:09	ST 7	282	12	7.8	5.1	0.327	1.4	1.16	0.317	<10	<10						
	01/28/02	12:09	SF																
	01/28/02	14:09	ST 34	568	6.3	8.7	4	0.355	1.3	0.765	0.225	<10	<10	1/31/2002	9:24	716	8.9	8.6	15.3
	01/31/02	8:09	SF																
	02/08/02	9:40	D 1																
	02/07/02	8:26	DT 24	859	3.2	9.1	4.4	<0.05	1.4	0.857	0.204	<10	<10	2/8/2002	10:16	895	9.1	14.4	20.3
	02/08/02	7:26	DF																
	02/15/02		D 1																
	02/14/02	10:06	DT 24	961	6	8.9	1.2	<0.05	2.2	0.949	0.216	<10	<10	2/15/2002		861	9.1	16.6	16.1
	02/15/02	9:06	DF																
	02/17/02	7:12	ST 4	308	3.7	6.9	12	1.98	9.3	3.37	0.211	<10	<10	2/18/2002	11:26	768	9	13.5	16
	02/17/02	8:12	SF																
	02/17/02	10:12	ST 12	356	13	7.6	5.2	0.151	1.5	0.765	0.225	<10	<10						
	02/18/02	8:12	SF																
	02/18/02	10:12	ST 36	810	4.1	8.7	2	<0.05	1.8	0.949	0.185	<10	<10	2/21/2002		1031	8.9	16.7	10.1
	02/21/02	8:12	SF											2/20/2002	10:46	775	9.3	15.3	21.2
	03/01/02	10:14	D 1																
	02/28/02	8:20	DT 12	991	7.7	8.9	5.7	0.368	1.9	1.65	0.395	<10	<10	3/1/2002	10:14	649	8.4	17.9	7
	03/01/02	7:20	DF																
	03/06/02	22:43	ST 5	548	144	7.3	18	1.47	14	4.28	0.204	200	120	3/8/2002	11:28	572	9.3	20.3	11.2
	03/06/02	23:43	SF																
	03/07/02	1:43	ST 19	443	36	8	5.3	0.117	3.3	1.19	0.263	23	10	3/10/2002	11:49	693	9.75	24.5	11.3
	03/08/02	12:43																	
	03/08/02	14:43	ST 29	975	8.4	8.7	2.4	0.091	6.1	0.918	0.229	<10	<10	3/12/2002		704	9.1	20.3	11.5
	03/10/02	22:43	SF																
	03/15/02	11:30	D 1																
	03/14/02	11:05	DT 24	2120	14	8.5	2	0.572	6.8	1.59	0.362	10	<10	3/15/2002	11:30	862	9.2	22.5	20.1
	03/15/02	10:05	DF																
	03/22/02	10:40	D 1																
	03/22/02	10:40	DT 1	744	14	9.8	<0.44	<0.05	1.3	0.704	0.088	14	<10	3/22/2002	10:40	627	9.8	19	21.9
	03/22/02	10:40	DF																
	03/29/02	13:09	D 1																
	03/29/02	13:09	DT 1	696	7.5	11	<0.44	<0.05	1.2	0.704	0.075	23	13	3/29/2002	13:09	753	10.8	21.5	22.5
	03/29/02	13:09	DF																
	04/05/02	8:26	D 1																
	04/05/02	8:26	DT 1	634	34	9.2	0.88	<0.05	18	6.43	0.402	87	47	4/5/2002	8:26	668	9.2	15.4	29
	04/05/02	8:26	DF																
	04/11/02	11:10	D 1																
	04/10/02	12:20	DT 23	796	9.8	9.2	<0.44	0.184	1.4	0.0918	0.195	<10	<10	4/11/2002	11:10	500	9.5	19.4	19.8
	04/11/02	10:20	DF																
	04/18/02	13:24	D 1																

RMP WATERSHED SITES
Costa Mesa Channel

STATION	DATE	TIME	SAMPLES	EC	Turb	pH	NO3	NH3	TKN	PO4	o-PO4	TSS	VSS	Field Measurements	EC	pH	Temp	DO	
			Type	#	μmhos	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Date	Time	μmhos	C	mg/L	
CMCG02	04/18/02	13:24	DT	1	718	13	10.4	<0.44	0.134	4.8	2.82	0.107	18	14	4/18/2002	13:24	778	10.2	29.5
	04/18/02	13:24	DF															19.6	
	04/25/02	10:10	D	1															
	04/25/02	10:10	DT	1	649	171	8.7	<0.44	1.17	44	19.9	0.257	660	340	4/25/2002	10:10	508	8.9	19.1
	04/25/02	10:10	DF															15.4	
	05/02/02	10:00	D	1															
	05/01/02	8:50	DT	24	925	4.2	9.2	<0.44	0.091	1.5	0.704	0.119	<10	<10	5/2/2002	10:00	858	9	18.3
	05/02/02	9:50	DF															10.3	
	05/10/02	11:19	D	1															
	05/09/02	8:01	DT	24	1060	6.5	9	1.1	0.115	2.1	1.29	0.269	10	<10	5/10/2002	11:19	895	9.5	24.7
	05/10/02	7:01	DF															24.2	
	05/16/02	11:25	D	1															
	05/16/02	11:25	DT	1	945	106	8.9	<0.44	5.64	32	11.3	0.223	270	130	5/16/2002	11:25	704	8.3	21.4
	05/16/02	11:25	DF															7.4	
	05/22/02	10:20	D	1															
	05/22/02	10:20	DT	1	775	382	8.1	<0.44	<0.05	24	10.4	0.502	1080	540	5/22/2002	10:27	504	8.5	20.6
	05/22/02	10:20	DF															12.5	
	06/07/02	11:32	D	1															
	06/06/02	11:32	DT	24	929	6.6	8.5	<0.44	0.143	2.9	2.97	0.696	14	10					6/7/2002
	06/07/02	10:32	DF																
	06/13/02	10:45	D	1															
	06/13/02	10:45	D	1	884	8.1	9.1	<0.44	0.089	1.6	0.826	0.166	10	<10	6/13/2002	10:45	867	8.9	22.8
	06/13/02	10:45	D	1														17.8	
	06/21/02	7:45	D	1															
	06/21/02	7:45	DT	1	1190	13	7.9	0.88	0.255	5.7	7.34	1.78	20	13	6/21/2002	7:45	1219	7.9	18.9
	06/21/02	7:45	DF															4.7	
	06/27/02	10:57	D	1															
	06/27/02	10:57	DT	1	849	13	8.5	0.88	1.29	5.3	3.37	0.394	27	17	6/27/2002	10:57	920	8	21.4
	06/27/02	10:57	DF															9	

RMP WATERSHED SITES
Lane Channel

STATION	DATE	TIME	SAMPLES		EC µmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L	
			Type	#											Date	Time					
LANF08	07/11/01	10:14	D	24	5460	11	8.4	17	<0.05	1.4	0.49	0.088	15	<10	7/12/2001		6449	8.2	24.6		
	07/12/01	9:15																			
	08/23/01		D	1	5460	6.5	9	23	0.059	1.1	2.11	0.417	21	<10							
	09/21/01		D	1	5840	12	8.3	22	0.158	1.3	0.826	0.212	15	<10							
	10/17/01	8:05	D	24	6000	38	8.5	24	0.107	1.6	0.857	0.141	58	10	10/18/2001	12:35	5602	8.5	24.8	21.1	
	10/18/01	7:05																			
	11/14/01	9:20	D	1	5340	20	8	18	0.713	2.1	0.734	0.2	17	<10	11/14/2001	9:20	5812	7.9	17.5	7.3	
	11/24/01	15:54	ST	5	880	373	7.7	7.5	0.398	5.6	3.03	0.076	680	96							
	11/24/01	16:54	SF																		
	11/24/01	18:54	ST	4	645	63	7.5	8.4	0.308	2.5	0.826	0.112	65	13							
	11/25/01	0:54	SF																		
	11/25/01	10:16	ST	24	5270	26	8.1	20	0.445	2.3	0.581	0.116	26	<10							
	11/27/01	9:16	SF																		
	11/27/01	10:16	ST	24	7350	19	8	31	0.247	1.6	0.52	0.088	19	<10							
	11/29/01	10:16	SF																		
	11/29/01	10:34	ST	5	4920	133	8	25	0.384	2.6	1.13	0.123	190	32							
	11/29/01	11:34	SF																		
	11/30/01	9:34	ST	34	6090	15	8.2	28	0.208	1.2	0.49	0.118	11	<10							
	12/03/01	3:34	SF																		
	12/03/01	5:34	ST	4	1530	27	7.8	14	0.222	1.7	0.643	0.119	30	<10							
	12/03/01	11:34	SF																		
	12/07/01	11:10	D	1	7540	7.8	8	37	0.108	0.67	0.459	0.091	<10	<10	12/7/2001	11:10	7190	8.3	17	11.1	
	12/14/01	14:38	ST	5	1510	132	7.7	17	0.587	4	1.32	0.084	210	40	12/16/2001	9:56	3600	11.7	11.7	7.2	
	12/14/01	15:38	SF																		
	01/23/02	8:43	D	24	6880	0.2	8.3	36	0.114	0.92	0.337	0.04	<10	<10	1/24/2002	9:15	6929	8	10.3	15.2	
	01/24/02	7:43																			
	01/27/02	20:20	ST	5	3350	112	7.9	44	0.223	2.6	0.643	<0.01	140	25	1/29/2002	8:20	3217	7.8	11.6	7.8	
	01/27/02	21:20	SF																		
	01/27/02	23:20	ST	8	927	62	7.8	5.9	0.277	1.4	1.04	0.125	79	14							
	01/28/02	13:20	SF																		
	01/28/02	15:20	ST	34	3950	17	8	20	0.284	1.2	0.337	0.111	15	<10	1/31/2002	8:34	5756	7.9	10.2	9.6	
	01/31/02	8:20	SF																		
	02/22/02	13:58	D	1	6660	11	8.4	33	<0.05	0.83	0.306	0.047	19	<10	2/22/2002	13:58	4250	8.1	25.9	19.1	
	03/07/02	5:11	ST	5	1700	125	7.7	29	1.12	7.2	1.32	0.05	160	32	3/8/2002	10:16	2930	7.9	17.9	7.3	
	03/07/02	6:11	SF																		
	03/07/02	8:11	ST	15	2060	102	7.8	7	0.399	2.2	0.643	0.104	88	15	3/10/2002	10:25	6816	8	21	7.4	
	03/08/02	12:11	SF																		
	03/08/02	14:11	ST	33	5820	13	8.2	30	0.129	0.89	0.367	0.077	12	<10	3/12/2002	9:15	7023	7.9	17.6	11.8	
	03/11/02	6:11	SF																		
	04/25/02	9:15	D	1	2520	15	7.6	8.8	<0.05	2.9	0.306	0.08	23	13	4/25/2002	9:15	2508	8.2	18.4	7.2	
	05/16/02	10:46	D	1	5610	7.6	8.1	26	0.101	1	0.398	0.038	17	<10	5/16/2002	10:46	4758	8.2	20.4	7.8	
	06/21/02	9:45	D	1	6020	7.3	8	16	0.219	1.3	0.796	0.161	10	<10	6/21/2002	11:06	5877	8.3	20.8	5.7	

RMP WATERSHED SITES
El Modena Irvine Channel

STATION	DATE	TIME	SAMPLES		EC µmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L	
			Type	#											Date	Time					
MIRF07	07/11/01	9:52	D	24	1370	13	8.4	8.7	0.102	2.2	1.32	0.318	29	12	7/12/2001		1364	8.7	25.3		
	07/12/01	8:52																			
	08/23/01		D	1	1160	8.1	9.9	9.7	0.135	1.8	0.832	0.148	18	<10							
	09/28/01	10:46		1	1040	22	9.1	7.5	0.204	3.1	1.56	0.257	18	<10	9/28/2001	10:46	1077	8.7	25.5	17.5	
	10/18/01	11:30	D	1	1230	19	9.2	6.6	0.056	1.2	0.949	0.167	26	<10	10/18/2001	11:30	1108	9.1	24.5	10.2	
	11/14/01	9:10	D	1	1230	4.2	8.7	12	<0.05	1.4	0.979	0.183	<10	<10	11/14/2001	9:10	1278	8.7	16.7	10.5	
	12/26/01	10:55	D	1	1270	2	9.1	6.6	<0.05	2.3	0.337	0.069	<10	<10	12/26/2001	10:55	759	14.8	8.3		
	02/28/02	7:32	D	12	1440	3.2	8.8	22	<0.05	1.6	0.551	0.102	<10	<10	3/1/2002	9:05	1340	9	16.9		
	03/01/02	6:32																			
	04/25/02	9:10	D	1	991	3.6	8.9	8.4	<0.05	1.4	0.459	0.149	<10	<10	4/25/2002	9:10	1059	8.8	17.8	14.1	
	06/27/02	9:30	D	1	1240	7.1	9	5.3	0.107	1.4	1.1	0.208	<10	<10	6/27/2002	9:30	1358	8.4	20.7	16	

RMP WATERSHED SITES
Santa Ana Delhi Channel

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L	
			Type	#										Date	Time					
SADF01	07/03/01	9:20	D	1	2040	44	8.3	8.9	0.051	1.2	0.765	0.059	96	22	7/3/2001		2380	7.8	23.4	7.6
	07/22/01		D	1	2250	8.4	8.2	9.3	<0.05	1.2	0.199	0.043	11	<10						
	08/01/01		DT	24	2260	12	8.2	10	0.21	0.52	0.367	0.045	16	<10						
	08/02/01																			
	08/16/01		D	1	2190	9.4	8.2	7.9	<0.05	1.3	0.428	0.035	14	<10						
	09/06/01		D	1	2030	4.4	8.3	260	<0.05	0.5	0.153	0.071	<10	<10						
	09/13/01		D	1	1760	19	8.3	11	<0.05	0.95	0.275	0.024	26	<10						
	10/10/01	9:20	D	24	1480	1.3	8.1	42	<0.05	1.7	0.49	0.177	<10	<10	10/11/2001	9:10	1719	7.8	19.9	8.1
	10/11/01	8:20																		
	10/17/01	8:54	D	24	2170	13	8.3	12	0.149	1.7	0.49	0.057	24	<10	10/18/2001		1984	8.6	23.3	21.1
	10/18/01	7:54																		
	11/01/01	8:12	D	12	2390	7.1	8.3	13	<0.05	1.5	0.211	0.02	14	<10	11/2/2001		2110	7.9	18.3	11.7
	11/02/01	7:12																		
	11/07/01	8:17	D	12	2620	38	8.2	24	0.159	1.3	0.398	0.085	41	<10	11/8/2001		2695	8	18.2	13.5
	11/08/01	7:17																		
	11/29/01	8:56	S	5	920	15	8.6	2.4	0.45	1.5	0.275	0.077	16	<10						
	11/29/01	9:56																		
	11/29/01	11:56	ST	10	585	56	8.2	3.7	0.348	2.4	0.796	0.142	66	14						
	11/30/01	5:56	SF																	
	11/30/01	7:56	ST	24	870	6.9	8.6	2	0.311	1.9	0.245	0.074	<10	<10						
	12/02/01	5:56	SF																	
	12/02/01	8:56	ST	14	830	14	8.5	2.7	0.244	1.8	0.428	0.049	19	<10						
	12/03/01	10:56	SF																	
	12/12/01	9:33	D	24	1170	5.2	8.4	5.6	0.271	1.4	0.306	0.065	<10	<10	12/13/2001	9:54	835	8.5	21.4	7.2
	12/13/01	8:33																		
	12/14/01	13:15	ST	5	480	39	7.7	5.9	0.88	3.7	0.887	0.12	64	20	12/16/2001	10:07	856	21.3	7.3	
	12/14/01	14:15	SF																	
	12/14/01	16:15	ST	11	670	33	8.2	4.9	0.223	2.4	0.949	0.109	38	<10	12/18/2001		856	21.3	7.3	
	12/15/01	12:15	SF																	
	12/15/01	14:15	ST	31	840	7	8.5	3.8	0.115	1.7	0.303	0.058	<10	<10	12/18/2001		881	22	8.9	
	12/18/01	10:24	SF																	
	12/21/01	7:25	DT	1																
	12/21/01	7:25	DF																	
	12/26/01	11:32	D	1	1210	3	8.7	5.3	0.092	1.5	0.184	0.045	<10	<10	12/26/2001	11:39	1137	21.8	9.14	
	01/02/02	9:05	D	24	1000	4.5	8.5	5.3	0.084	1.1	0.184	0.058	<10	<10	1/3/2002	10:46	1023	8.3	22.8	10
	01/03/02	8:05																		
	01/08/02		D	24	2600	2.8	8.3	15	<0.05	0.58	0.122	0.022	<10	<10	1/8/2002	12:40	2642	8.2	17.2	19.4
	01/09/02																			
	01/27/02	21:02	ST	5	712	38	8	6.2	0.514	2.9	0.551	0.062	51	17	1/29/2002	9:16	759	8.2	21.2	4.5
	01/27/02	22:02	SF																	
	01/28/02	0:02	ST	6	331	68	7.8	3.8	0.151	2.1	1.01	0.122	94	21						
	01/28/02	12:02	SF																	
	01/28/02	14:02	ST	34	818	7.5	8.4	2.9	0.245	1.4	0.214	0.075	<10	<10	1/31/2002	9:04	848	8.3	22	5.8
	01/31/02	8:09	SF																	
	02/07/02	8:13	D	24	838	9	8.6	3.7	0.128	1.2	0.49	0.065	12	<10	2/8/2002	8:58	900	8.4	24.6	7.2
	02/08/02	7:13																		
	02/14/02	9:58	D	24	789	4.2	8.6	2.6	0.114	1.2	0.275	0.056	<10	<10	2/15/2002	9:20	690	8.4	24.6	5.8
	02/15/02	8:58																		
	02/17/02	8:11	ST	2	356	2.1	7.6	8.2	0.081	3.4	1.47	<0.01	<10	<10	2/18/2002	10:03	795	8.3	24.2	6.4
	02/17/02	9:11	SF																	

RMP WATERSHED SITES
Santa Ana Delhi Channel

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L		
			Type	#										Date	Time						
SADF01	02/17/02	11:11	ST	12	645	13	8.3	2.5	0.116	1.11	0.306	0.081	<10	<10	2/21/2002	9:02	883	8.3	24.5	7	
	02/18/02	9:11	SF													2/20/2002	9:21	752	8.4	24	9.3
	02/18/02	11:11	ST	36	803	4.6	8.5	2.6	<0.05	0.94	0.245	0.05	<10	<10							
	02/21/02	9:11	SF																		
	03/07/02	1:38	ST	5	614	61	7.6	15	1.05	5	1.53	0.183	64	26	3/8/2002	10:55	867	8.2	17.7	15.2	
	03/07/02	2:38	SF																		
	03/07/02	4:38	ST	17	761	24	8.1	7	<0.05	1.5	0.734	0.143	15	<10	3/10/2002		1506	8.5	22.3	8.7	
	03/08/02	12:38	SF																		
	03/08/02	14:38	ST	31	1450	8.5	8.5	7	<0.05	0.81	0.184	0.035	<10	<10	3/12/2002	10:56	1789	8.3	19.3	16.6	
	03/11/02	2:38	SF																		
	03/22/02	D	1	1980	4.8	8.6	12	<0.05	0.57	0.275	0.052	<10	<10	3/22/2002		2020	8.7	18.9	21.9		
	04/05/02	8:08	D	1	2310	4.3	8.3	19	<0.05	1	0.275	0.019	<10	<10	4/5/2002	8:08	2359	8.2	15.7	15.9	
	05/01/02	8:30	D	24	2330	3.8	8.3	8.4	0.063	0.91	0.0612	<0.01	<10	<10	5/2/2002	10:16	2008	8.2	18.1	12.6	
	05/02/02	7:30																			
	05/09/02	7:50	D	24	1930	12	8.3	7.5	<0.05	1.3	0.245	0.015	18	<10	5/10/2002	10:58	1954	8.3	21.4	25.9	
	05/10/02	6:50																			
	06/06/02	11:15	D	24	1940	10	8.3	7	<0.05	0.99	0.214	<0.01	15	<10	6/6/2002	11:15	1963	8.3	25.2	22.7	
	06/07/02	10:15																			
	06/13/02	10:30	D	1	1890	6.5	8.6	9.2	0.055	0.85	0.245	0.024	31	<10	6/13/2002	10:30	1865	8.4	23	25	

RMP WATERSHED SITES
San Diego Creek at Campus Drive

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L	
			Type	#										Date	Time					
SDMF05	07/03/01	9:05	D	1	2050	1.2	8.2	66	<0.05	0.51	<0.061	0.03	<10	7/3/2001	9:05	2820	8.2	25.8	8.5	
	07/12/01	10:23	D	1	2480	72	8.5	15	<0.05	1.4	0.398	0.016	71	16	7/12/2001	10:23	2754	8.3	21.2	10.1
	07/25/01	12:32	D	24	2570	78	8.6	14	<0.05	2.6	0.367	0.104	85	20	7/26/2001		2550	8.5	25.2	9.1
	07/26/01	11:32																		
	08/01/01	11:35	DT	24	2740	70	8.6	15	0.138	1.4	0.245	<0.01	76	16	8/2/2001		28.2	8.2	24.9	9.8
	08/02/01	10:35																		
	08/07/01		D	1	2700	69	8.4	17	0.063	1.5	0.52	0.05	88	13						
	08/16/01		D	1	2690	47	8.3	15	<0.05	2	0.428	<0.01	55	11						
	08/23/01		D	1	2630	63	8.4	11	0.077	1.3	0.263	0.047	78	13						
	09/06/01		D	1	2610	34	8.4	9.2	0.059	1.4	0.459	0.022	39	<10	9/6/2001		2890	8.2	24.8	8.2
	09/13/01			1	2720	48	8.5	16	0.052	1.6	0.398	<0.01	59	10						
	09/21/01		D	1	2800	38	8.5	13	<0.05	1.6	0.398	<0.01	49	<10						
	09/28/01			1	2750	47	8.2	14	0.119	1.6	0.551	<0.01	58	10						
	10/03/01	9:16	D	24	2540	36	8.4	16	0.183	1.4	0.857	0.119	43	<10	10/4/2001	9:07	2349	8.1	23.1	8
	10/04/01	8:16																		
	10/10/01	8:55		24	2720	45	8.4	17	0.124	1.6	0.857	0.061	46	<10	10/11/2001	8:44	2581	8.2	20.9	9.13
	10/11/01	7:55																		
	10/17/01	8:35	D	24	2580	47	8.4	21	0.106	1.7	0.459	0.048	56	<10	10/18/2001		2374	9.9	21.3	10.13
	10/18/01	7:35																		
	10/24/01	8:44		12	2660	55	8.4	25	0.105	1.3	0.704	0.073	86	10	10/25/2001		2771	8.16	21	10.6
	10/25/01	7:44																		
	11/01/01	7:55		12	2670	49	8.4	24	0.132	2.2	0.581	0.06	56	<10	11/2/2001		2526	8.1	18.8	10.4
	11/02/01	6:55																		
	11/07/01	8:50		12	2270	8	8.2	14	0.143	2	0.398	0.107	11	<10	11/8/2001		2933	8.1	18.6	8.8
	11/08/01	7:50																		
	11/14/01	9:44	D	1	1920	79	7.9	26	0.404	2.5	1.25	0.296	70	10	11/14/2001	10:56	2035	7.8	17.6	8
	11/20/01	10:36	D	24	2910	48	8.5	33	0.128	1.9	0.918	0.145	57	12	11/20/2001	11:25	8.27	17.1	8.7	
	11/21/01	9:36																		
	11/29/01	14:18	ST	3	1560	63	7.9	24	0.37	2.1	1.13	0.26	70	12						
	11/29/01	16:18																		
	11/29/01	17:18	ST	21	1170	59	7.8	11	0.187	2.3	1.19	0.258	62	13						
	12/01/01	7:18																		
	12/01/01	9:07	ST	20	1900	48	8.3	27	<0.05	1.8	0.765	0.152	46	10						
	12/02/01	23:07	SF																	
	12/07/01	11:45	DT	1	2540	79	8.5	26	<0.05	2.1	0.581	<0.01	110	16						
	12/07/01	11:45	DF	1																
	12/07/01	11:45	D	1																
	12/12/01	9:10	DT	24	1850	60	8.2	29	0.245	1.6	1.13	0.121	61	14	12/13/2001	9:35	1716	8.2	11.7	10.2
	12/13/01	8:10	DF																	
	12/21/01	7:45	DT	1																
	12/21/01	7:45	DF																	
	12/26/01	10:54	D	1	2280	38	8.7	32	0.065	2.8	0.765	<0.01	67	24	12/26/2001	10:54	2117	11.5	9.9	
	01/02/02	9:21	DT	12	2130	35	8.3	34	0.102	1.6	1.16	0.152	38	10	1/3/2002	10:18	2112	8.1	15.5	13
	01/03/02	8:21	DF																	
	01/03/02	10:18	D	1																
	01/08/02	11:01	DT	23	2490	49	8.4	32	0.303	1.7	0.49	0.024	49	11	1/8/2002	11:01	2538	8.4	14.5	16.1
	01/09/02	10:01	DF																	
	01/16/02	9:23	DT	24	2740	39	8.3	37	0.429	1.8	0.49	0.13	44	<10	1/17/2002		2727	8.3	13.9	11.5
	01/17/02	8:23	DF																	

RMP WATERSHED SITES
San Diego Creek at Campus Drive

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L		
			Type	#										Date	Time						
SDMF05	01/23/02	9:10	DT	24	2970	39	8.3	43	0.254	1.2	0.52	0.05	45	<10	1/24/2002	9:34	2782	8.2	9.6	12.3	
	01/24/02	8:10	DF																		
	02/07/02	8:00	DT	24	2330	39	8.5	31	<0.05	1.6	0.398	<0.01	48	11	2/8/2002		2543	8.4	13.6	11.1	
	02/08/02	7:00	DF																		
	02/08/02	D	1																		
	02/15/02	8:34	DT	1	2470	32	8.3	39	0.209	1.6	0.704	0.095	30	<10							
	02/15/02	8:34	DF													2/15/2002	8:34	2168	8.3	14.2	11.1
	02/17/02	12:01	ST	19	1320	47	7.9	31	0.436	2.1	1.62	0.395	48	<10							
	02/19/02	0:01	SF																		
	02/19/02	2:01	ST	29	2260	29	8.2	33	0.144	1.5	0.918	0.191	30	<10	2/21/2002	8:43	2930	8	14.6	11.4	
	02/21/02	10:01	SF													2/20/2002	9:00	2305	8.1	14.1	15.4
	02/28/02	8:00	DT	12	2420	21	8.5	35	0.163	1.8	0.612	0.028	29	<10	3/1/2002	9:30	2484	8.4	17.6	10.8	
	03/01/02	7:00	DF																		
	03/07/02	7:50	ST	2	2410	0.45	8.3	38	0.17	1.6	0.765	0.132	<10	<10	3/8/2002	11:33	812	8	16.4	10.3	
	03/07/02	9:50	SF																		
	03/08/02	11:50	ST	12	894	37	7.8	19	0.344	2.5	1.1	0.262	35	<10	3/10/2002	10:40	2241	8.2	20.8	4.8	
	03/08/02	9:50	SF																		
	03/08/02	11:50	ST	39	1970	28	8.4	26	0.205	1.6	1.01	0.195	30	<10							
	03/11/02	15:50	SF																		
	03/14/02	9:15	DT	24	2650	31	8.5	170	0.223	1.9	0.734	0.087	38	<10	3/15/2002	10:59	2597	8.3	16.1	13.5	
	03/15/02	8:15	DF																		
	03/15/02	10:59	D	1																	
	03/22/02	10:10	DT	1	2520	23	8.3	29	0.083	1.5	0.551	0.046	28	<10	3/22/2002	10:10	2647	8.5	17.33	12.6	
	03/22/02	10:10	DF																		
	03/29/02	13:28	DT	1	2470	45	8.6	23	<0.05	1.4	0.367	<0.01	63	16	3/29/2002	13:28	2546	8.7	17.4	14.2	
	03/29/02	13:28	DF																		
	04/04/02	13:20	DT	19	2510	61	8.6	20	<0.05	3.9	0.551	<0.01	140	32	4/5/2002		2685	8.4	16.9	12.7	
	04/05/02	7:45	DF																		
	04/05/02	D	1																		
	04/11/02	10:45	DT	1	2570	28	8.5	20	0.11	2	0.918	<0.01	51	16	4/11/2002	10:45	1976	8.3	20.1	11.7	
	04/11/02	10:45	DF																		
	04/18/02	13:44	DT	1	2470	52	8.8	15	<0.05	2.8	0.643	0.012	85	25							
	04/18/02	13:44	DF													4/18/2002	13:44	2576	9	24.6	19.6
	04/25/02	9:32	DT	1	1630	41	7.8	24	0.64	3.7	0.887	0.094	45	13							
	04/25/02	9:32	DF													4/25/2002	9:32	1677	8.2	19	7.6
	05/01/02	8:10	DT	24	2650	85	8.6	16	0.507	2.8	0.428	<0.01	110	20	5/2/2002	9:16	2565	8.2	19.6	9.5	
	05/02/02	9:10	DF																		
	05/09/02	7:39	DT	24	2830	63	8.5	21	<0.05	2.2	0.612	<0.01	97	18	5/10/2002	10:08	2539	7.98	21.9	17	
	05/10/02	6:39	DF																		
	05/16/02	10:58	DT	1	2890	93	8.3	33	0.369	2.5	0.765	<0.01	140	26							
	05/16/02	10:58	DF													5/16/2002	10:58	2598	8.3	21.4	7.4
	05/22/02	9:40	DT	1	2640	106	8.4	21	0.063	2.2	0.551	<0.01	120	23	5/22/2002	10:16	2055	7.8	20.1	9.7	
	05/22/02	9:40	DF																		
	05/25/02	10:00	D	24	2610	108	8.3	19	0.543	3.5	0.459	0.022	140	28							
	05/26/02	9:00																			
	05/26/02	10:00	D	24	2600	93	8.4	19	0.508	3.4	0.459	0.028	140	26							
	05/27/02	9:00																			
	05/27/02	10:00	D	24	2530	109	8.4	18	0.421	3.8	0.398	<0.01	200	32							
	05/28/02	9:00																			
	05/28/02	10:00	D	24	3230	118	8.5	21	0.627	3.6	0.581	<0.01	150	30							
	05/29/02	9:00																			

RMP WATERSHED SITES
San Diego Creek at Campus Drive

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L
			Type	#										Date	Time				
SDMF05	05/29/02	10:00	D	24	2540	106	8.7	15	0.851	3	0.612	<0.01	140	32					
	05/30/02	9:00																	
	05/30/02	10:00	D	24	2540	91	8.4	16	0.843	3.1	0.765	<0.01	140	14					
	05/31/02	9:00																	
	06/07/02		DT	3	2660	85	8.3	14	0.182	2.2	0.581	0.013	110	20	6/6/2002	10:57	1963	8.3	23.9
	06/07/02		DF																22.7
	06/13/02	10:00	DT	1	2680	75	8.3	16	<0.05	2.5	0.459	<0.01	180	18	6/13/2002	10:00	2661	8.2	23.6
	06/13/02	10:00	DF																15.6
	06/21/02	8:10	DT	1	2840	44	8.2	13	0.078	2.6	0.643	<0.01	51	11					
	06/21/02	8:10	DF													6/21/2002		2876	8
	06/27/02	9:55	DT	1	2750	38	8.2	10	0.213	1.2	0.551	<0.01	49	11					
	06/27/02	9:55	DF																
	07/14/02				2590	66	8.3	17	<0.05	2.9	0.306	<0.05	63	<10					

RMP WATERSHED SITES
San Diego Creek at Harvard

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L	
			Type	#										Date	Time					
WYLED	07/03/01	8:45	D	1	2540	65	8.5	21	0.076	1.4	0.52	0.012	130	23	7/3/2001		2230	7.7	23	10.9
	07/21/01		D	1	2090	2.7	8.2	70	<0.05	0.87	0.184	0.031	<10	<10						
	08/01/01	11:18	DT	24	2030	2.1	8.3	84	0.074	0.64	0.306	0.021	<10	<10	8/2/2001		1330	8.2	23.2	13.5
	08/02/01	10:18																		
	08/16/01		D	1	2080	1.8	8.3	84	<0.05	1.1	0.367	0.038	<10	<10						
	09/06/01		D	1	2170	2.5	8.3	15	<0.05	0.43	0.367	0.133	<10	<10						
	09/13/01		D	1	2030	2.2	8.3	75	<0.05	0.88	0.459	0.134	<10	<10						
	10/03/01	9:00	D	24	2140	1.6	8.3	70	<0.05	0.41	0.643	0.132	<10	<10	10/4/2001	8:13	1943	7.8	20.2	8.4
	10/04/01	8:00																		
	10/10/01	8:36	D	24	2030	2.2	8.4	66	<0.05	0.59	0.581	0.074	<10	<10	10/11/2001	8:16	2042	7.6	18.8	6.9
	10/11/01	7:36																		
	11/01/01	7:46	D	12	2120	1.5	8.4	79	<0.05	0.61	0.122	0.075	<10	<10	11/2/2001		2046	7.8	17.7	10.2
	11/02/01	6:46																		
	11/07/01	7:27	D	12	2040	1.9	8.3	70	<0.05	1.5	0.398	0.145	<10	<10	11/8/2001		2366	7.9	16.2	12.2
	11/08/01	6:27																		
	11/12/01	19:49	ST	5	1230	53	8	30	0.292	3.8	1.07	0.57	110	28						
	11/12/01	20:49	SF																	
	11/12/01	22:49	ST	15	805	742	7.8	30	0.136	5	4.28	0.307	1030	140						
	11/15/01	8:49	SF																	
	11/15/01	10:49	ST	15	2320	5.5	8.2	62	0.104	1.2	0.581	0.195	<10	<10						
	11/16/01	14:02	SF																	
	11/24/01	15:11	S	5	1040	39	7.8	37	0.217	3.4	0.643	0.087	78	19						
	11/24/01	16:11																		
	11/24/01	18:11	ST	8	1230	138	8.2	22	0.322	3	1.93	0.294	220	35						
	11/25/01	16:11	SF																	
	11/25/01	18:11	ST	21	1900	6.5	8.4	38	<0.05	1.5	0.796	0.211	<10	<10						
	11/27/01	10:11	SF																	
	11/27/01	11:27	ST	24	2280	2.2	8.2	75	<0.05	1.1	0.551	0.113	<10	<10						
	11/29/01	9:27	SF																	
	11/29/01	13:01	ST	10	990	76	7.9	26	0.289	2	1.19	0.245	88	16						
	11/30/01	7:01	SF																	
	11/30/01	9:01	ST	28	2000	2.4	8.3	62	<0.05	0.8	0.459	0.161	<10	<10						
	12/02/01	15:01	SF																	
	12/12/01	8:57	D	24	2050	4.5	8.3	79	<0.05	0.69	0.704	0.145	<10	<10						
	12/13/01	7:57																		
	12/14/01	13:51	ST	5	1320	18	8.3	53	0.262	1.9	1.01	0.238	23	<10	12/16/2001	9:05	140	9.3	15.6	
	12/14/01	14:51	SF																	
	12/14/01	16:51	ST	11	920	98	8	35	0.437	2.3	1.71	0.343	130	19	12/18/2001		140	9.3	15.3	
	12/15/01	14:51	SF																	
	12/16/01	9:11	ST	17	1780	3.7	8.4	66	0.062	0.91	0.734	0.19	<10	<10						
	12/17/01	15:11	SF																	
	12/18/01	9:45	D	11	2070	3.1	8.3	79	<0.05	0.95	0.367	0.107	<10	<10						
	12/19/01	7:45																		
	01/02/02	9:48	D	12	1970	1.7	8.3	66	<0.05	1.5	0.52	0.16	<10	<10	1/3/2002	11:06	1897	7.9	15.3	17.1
	01/03/02	8:48																		
	01/16/02	9:08	D	24	2030	2.4	8.4	66	0.052	0.81	0.0918	<0.01	<10	<10	1/17/2002		1863	8.7	14.8	24
	01/17/02	8:08																		
	02/07/02	7:36	D	24	2010	2	8.4	79	<0.05	0.37	0.0612	0.027	<10	<10	2/8/2002	8:15	2237	8	13	13.8
	02/08/02	6:36																		
	02/14/02	9:34	D	24	2010	3.6	8.4	79	<0.05	0.91	0.398	0.068	<10	<10	2/15/2002	8:15	1841	8	13.5	15.3
	02/15/02	8:34																		

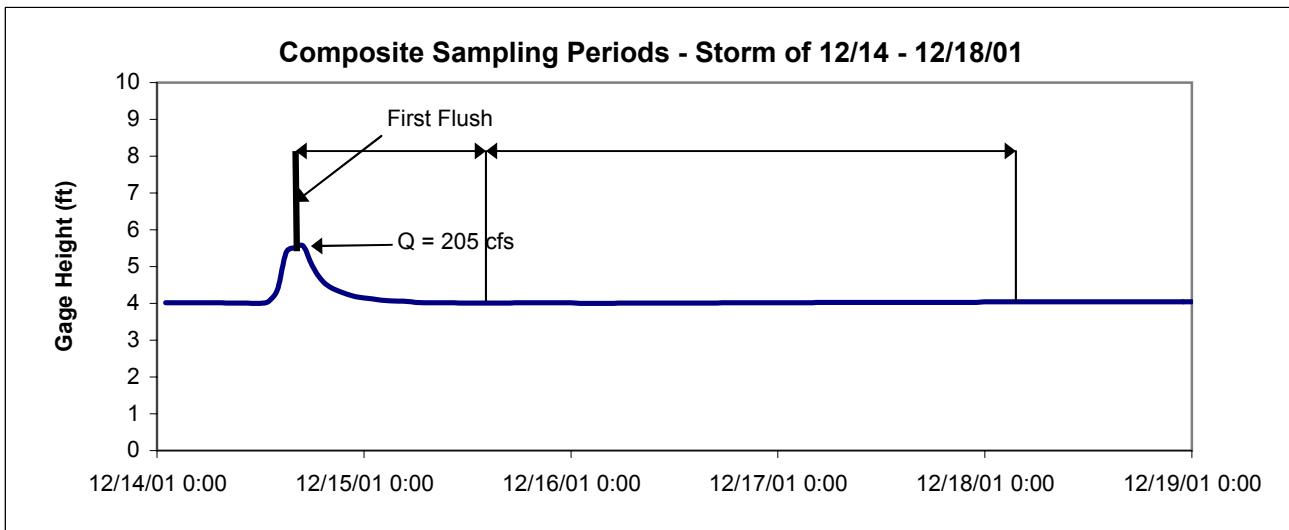
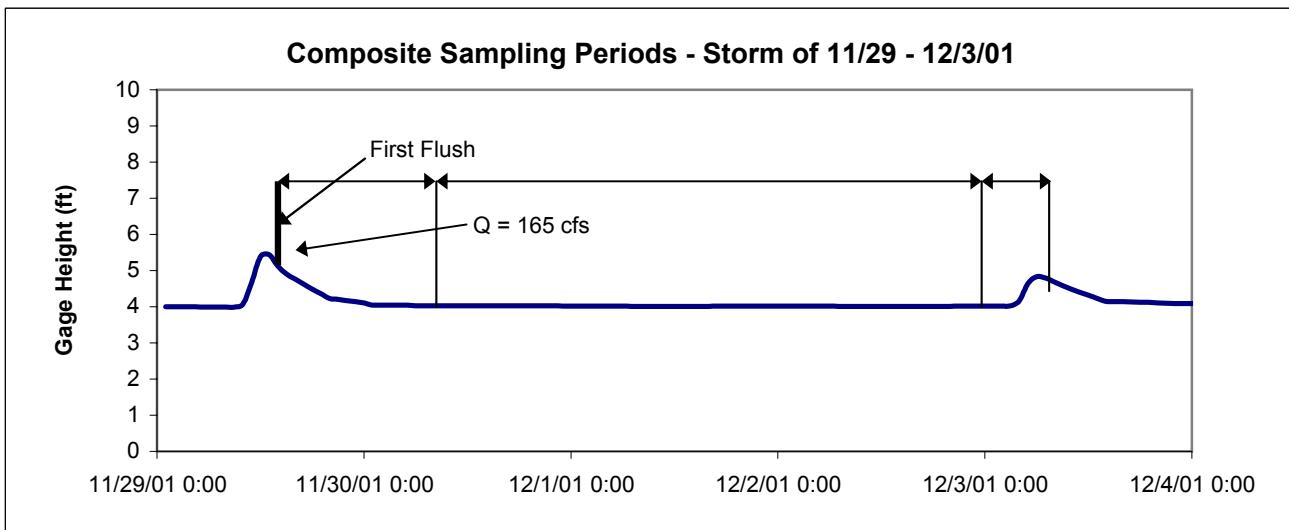
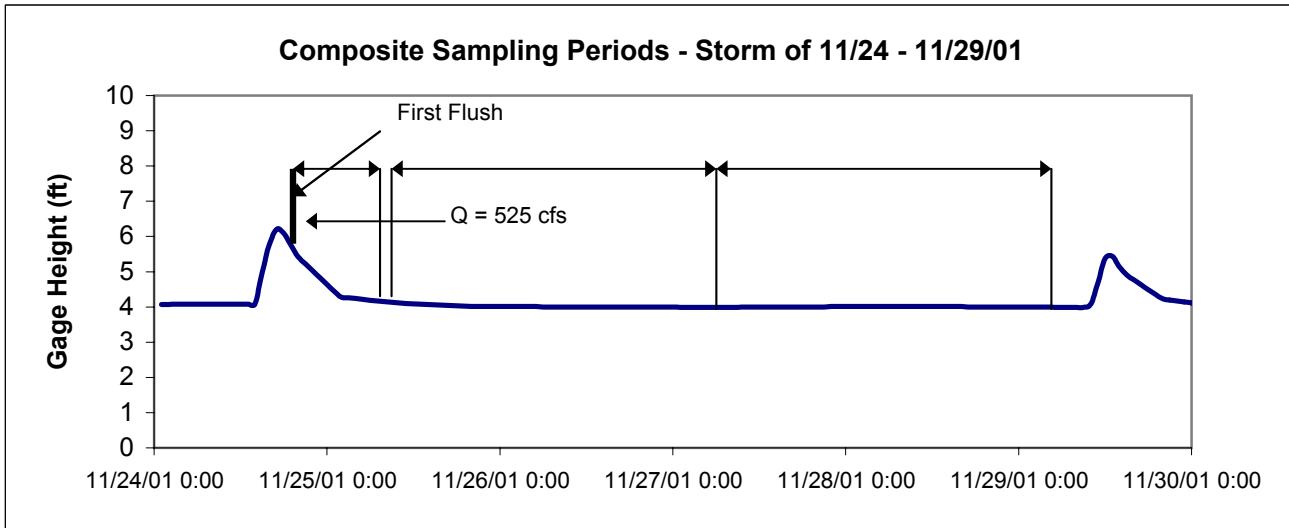
RMP WATERSHED SITES
San Diego Creek at Harvard

STATION	DATE	TIME	SAMPLES		Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L	Field Measurements		EC µmhos	pH	Temp C	DO mg/L		
			Type	#										Date	Time						
WYLED	02/17/02	8:50	ST	5	1100	1.4	8	39	0.392	3.7	1.74	0.152	<10	<10	2/18/2002	10:50	1596	8.1	15.2	17.9	
	02/17/02	9:50	SF																		
	02/17/02	11:50	ST	12	945	79	7.8	32	0.384	2.4	1.65	0.36	120	18							
	02/18/02	9:50	SF																		
	02/18/02	11:50	ST	24	1780	5	8.3	57	<0.05	0.99	0.49	0.119	<10	<10	2/21/2002	8:34	883	8.3	26.5	7	
	02/21/02	9:50	SF													2/20/2002	8:33	1938	8	13	12.5
	03/07/02	6:46	ST	5	1850	18	8.3	57	0.07	1.9	0.184	<0.01	33	12	3/8/2002	11:16	1086	8.1	15.5	16.6	
	03/07/02	7:46	SF																		
	03/07/02	9:46	ST	15	892	55	8.1	23	<0.05	2.1	1.01	0.15	82	14							
	03/08/02	12:46	SF													3/10/2002	10:06	2002	8.3	17.7	20.9
	03/08/02	14:46	ST	33	1880	1.7	8.4	57	<0.05	0.72	0.245	0.063	<10	<10	3/12/2002	9:00	2088	7.92	16.2	14.4	
	03/11/02	6:46	SF																		
	03/22/02	9:45	D	1	2080	1.6	8.4	79	<0.05	0.38	0.214	0.036	<10	<10	3/22/2002	11:06	2140	8.5	16.6	21.1	
	04/04/02	13:55	D	19	2050	1.5	8.2	84	<0.05	0.36	0.153	<0.01	<10	<10	4/5/2002	7:32	2240	7.9	14.9	12.2	
	04/05/02	7:27																			
	04/10/02	13:00	D	22	2040	1.6	8.3	84	<0.05	0.6	0.367	<0.01	<10	<10	4/11/2002	10:27	1618	8.1	18.4	15.4	
	04/11/02	10:00																			
	05/01/02	7:50	D	24	2260	1.7	8.3	84	0.089	0.55	0.0918	<0.01	<10	<10	5/2/2002	9:04	2236	8.1	17.6	14.8	
	05/02/02	6:50																			
	05/09/02	7:15	D	24	2360	3.5	8.6	48	0.065	1.1	0.704	0.115	<10	<10	5/10/2002	10:08	2539	8	21.9	17	
	05/10/02	6:15																			
	06/06/02	10:40	D	24	2210	1.3	8.2	75	<0.05	0.58	0.184	0.011	<10	<10	6/6/2002	10:00	2231	8.2	24.4	19.6	
	06/07/02	9:40																			
	06/13/02	9:50	D	1	2240	1.1	8.2	75	<0.05	0.57	<0.061	<0.01	<10	<10	6/13/2002	11:56	2238	8	21.5	22.2	

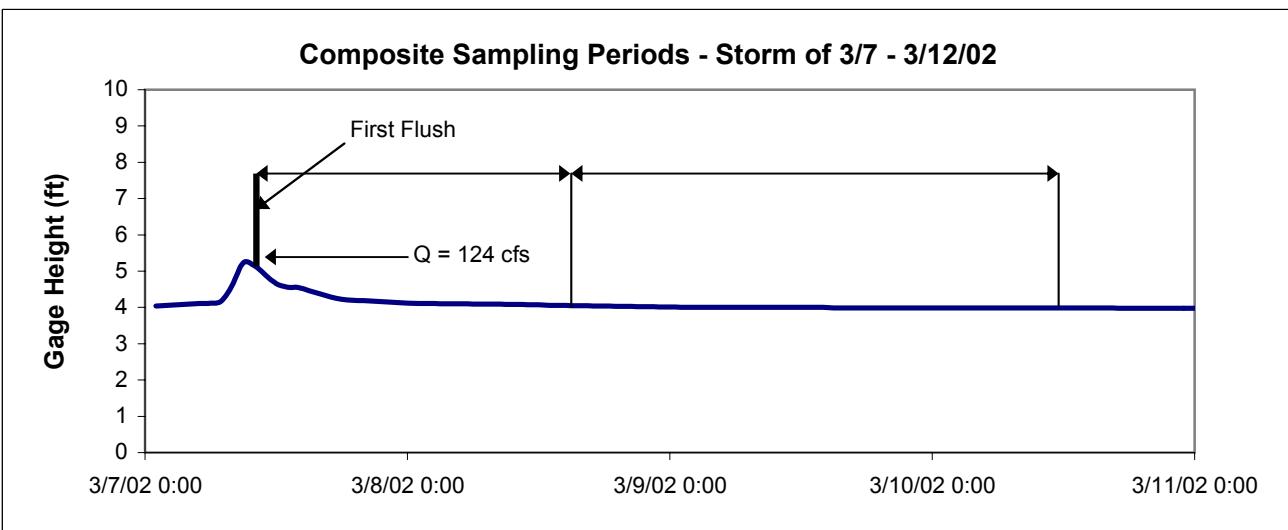
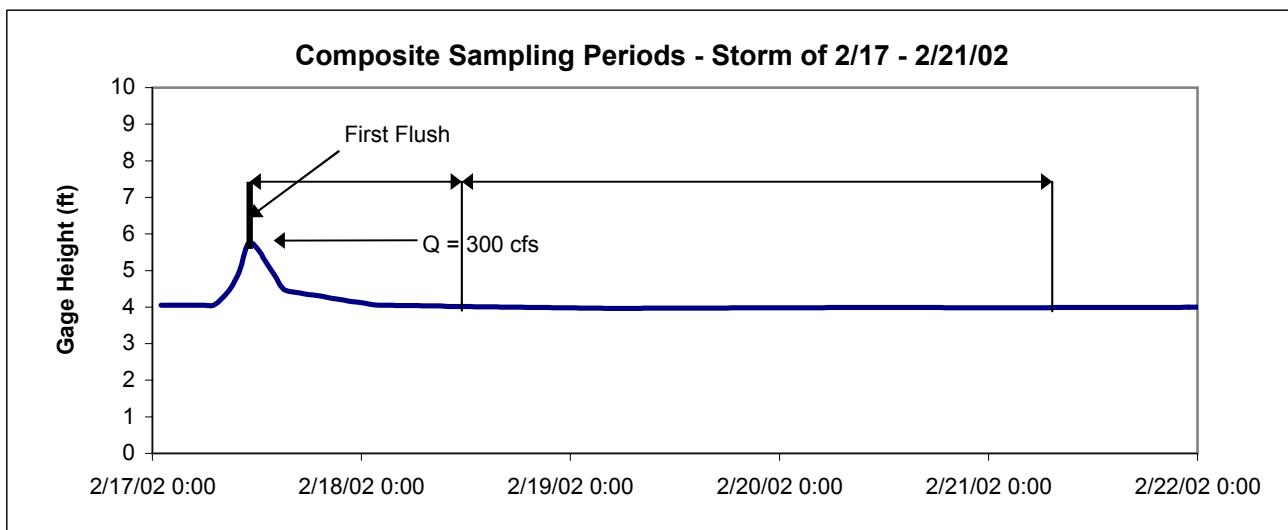
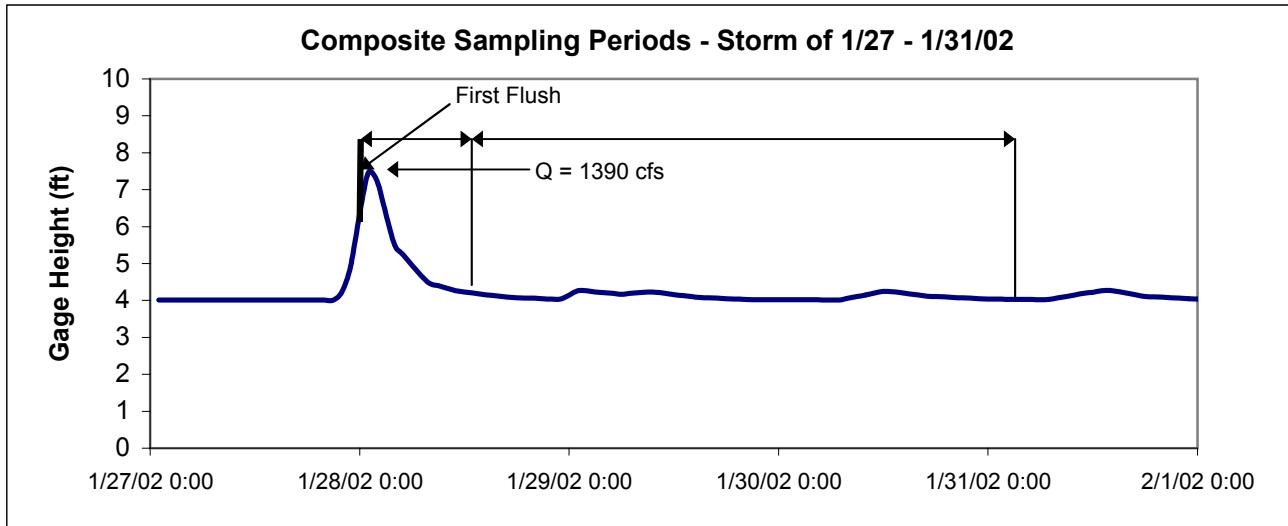
Appendix C

Storm Hydrographs

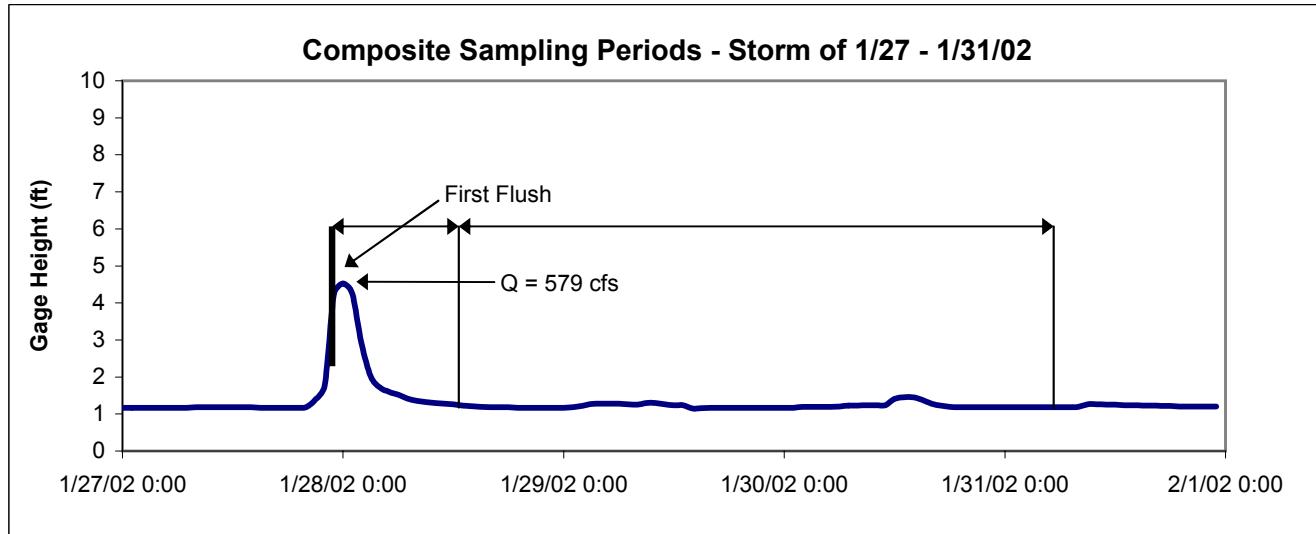
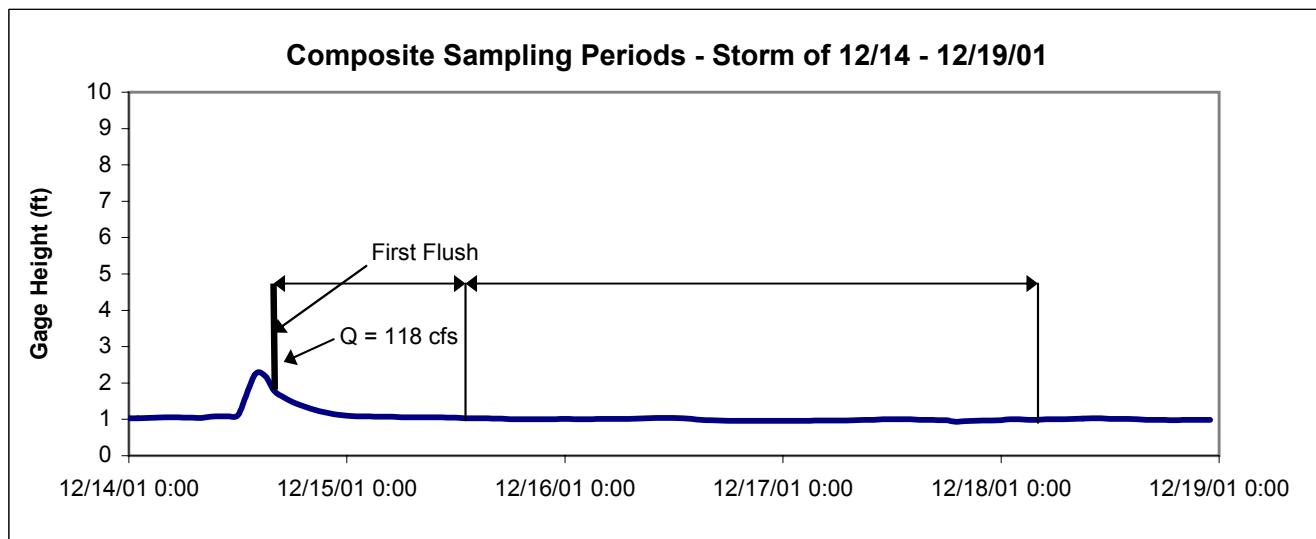
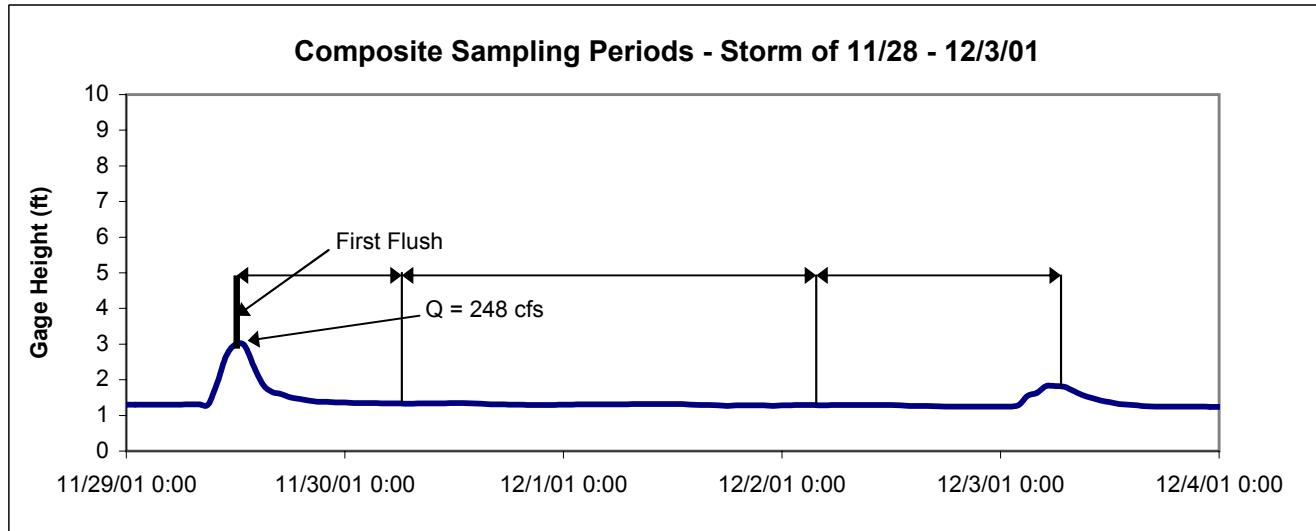
Stormwater Sampling in Peters Canyon Wash @ Barranca



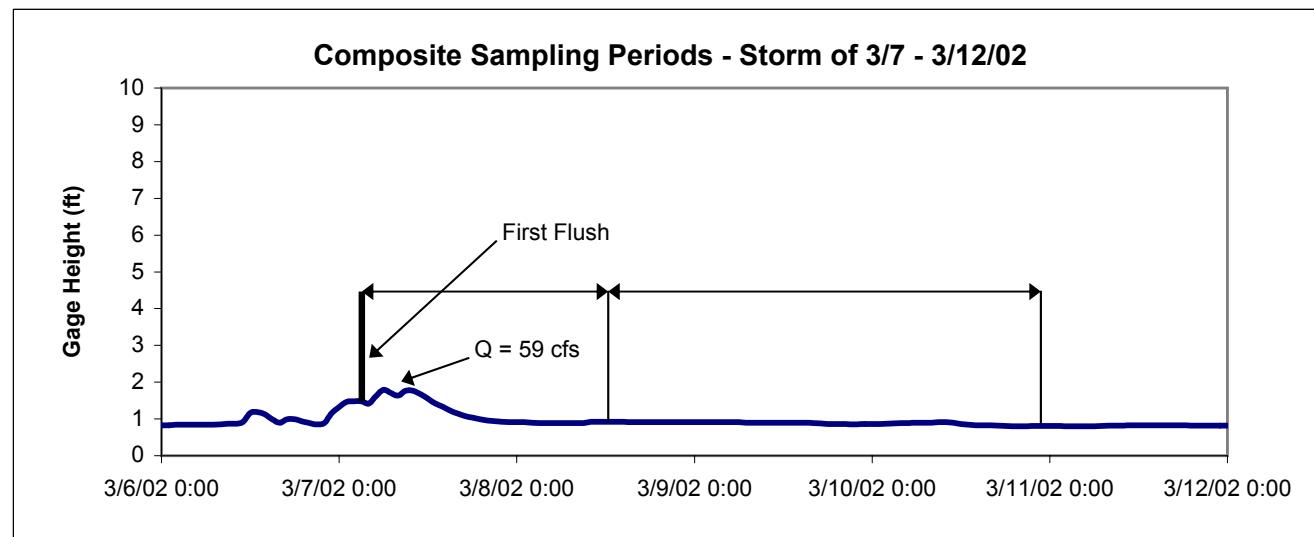
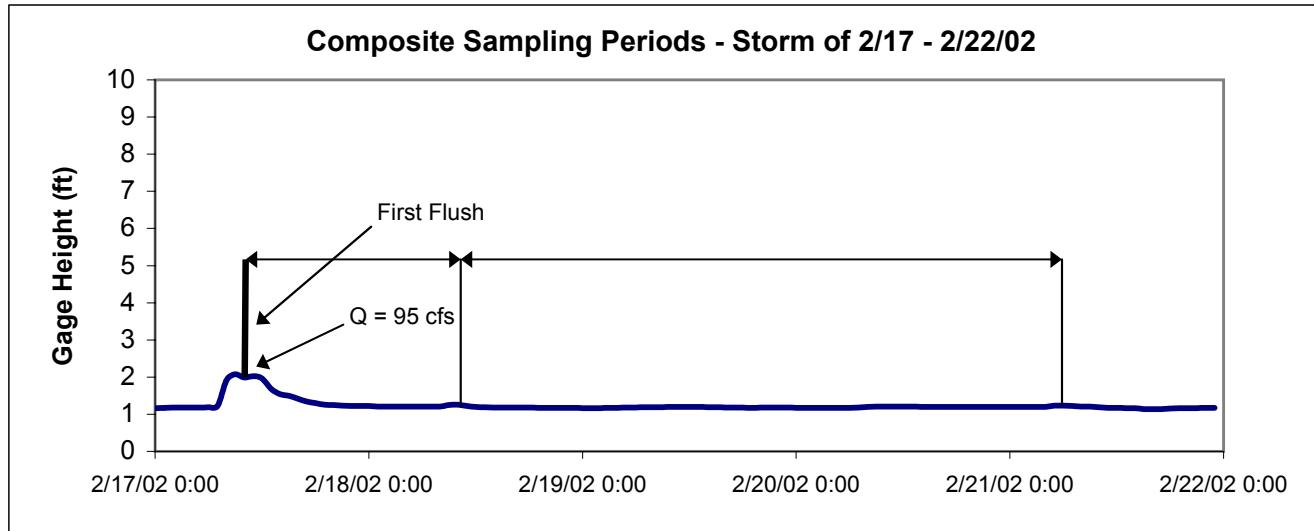
Stormwater Sampling in Peters Canyon Wash @ Barranca



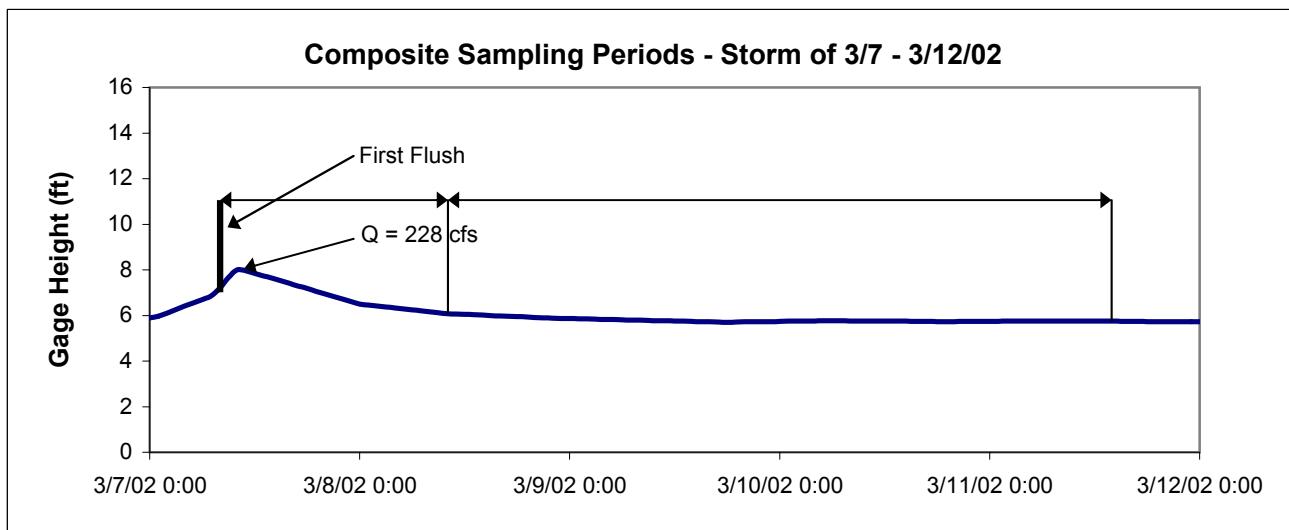
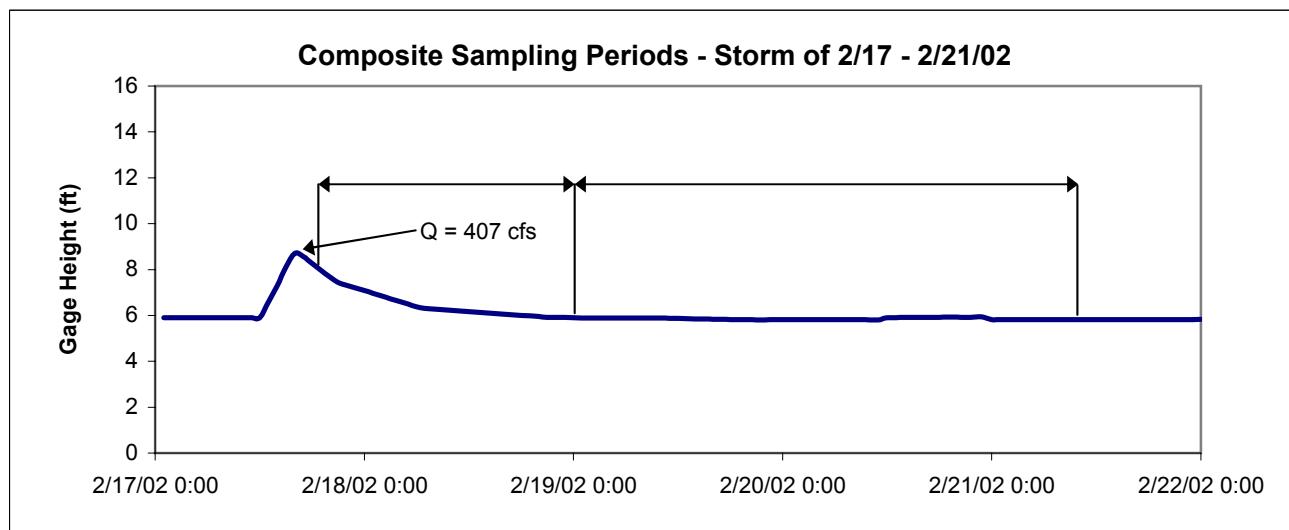
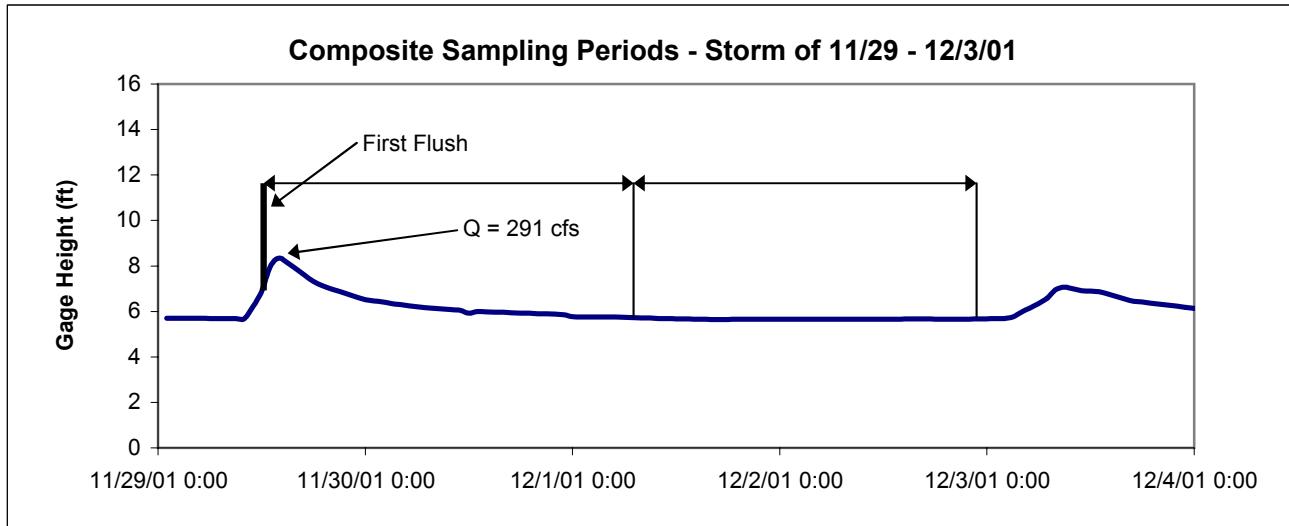
Stormwater Sampling in Santa Ana Delhi Channel



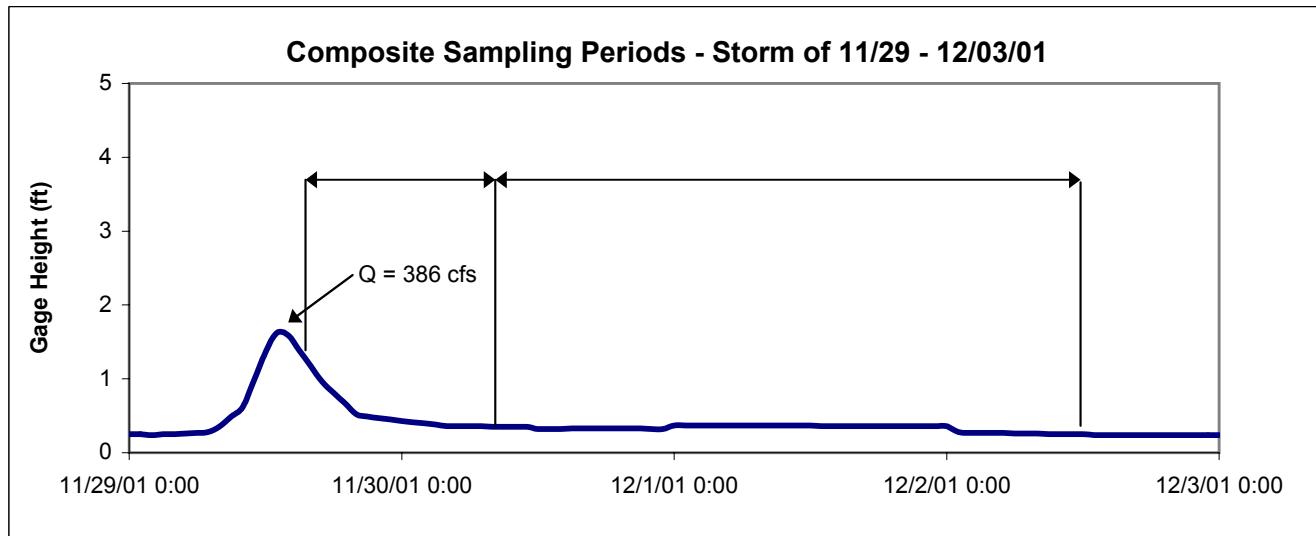
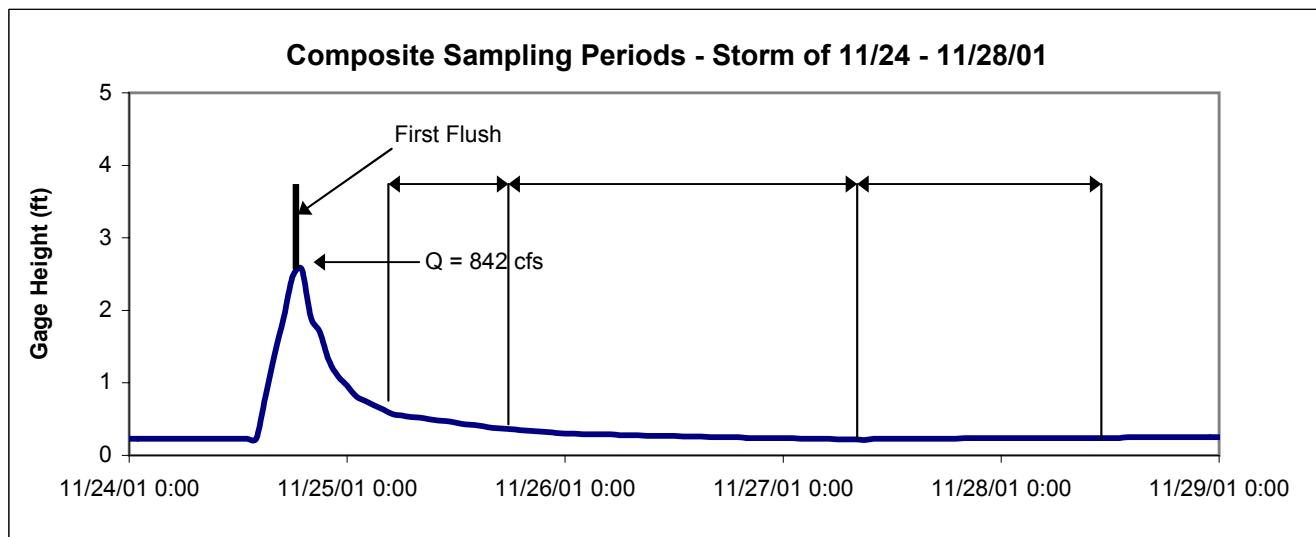
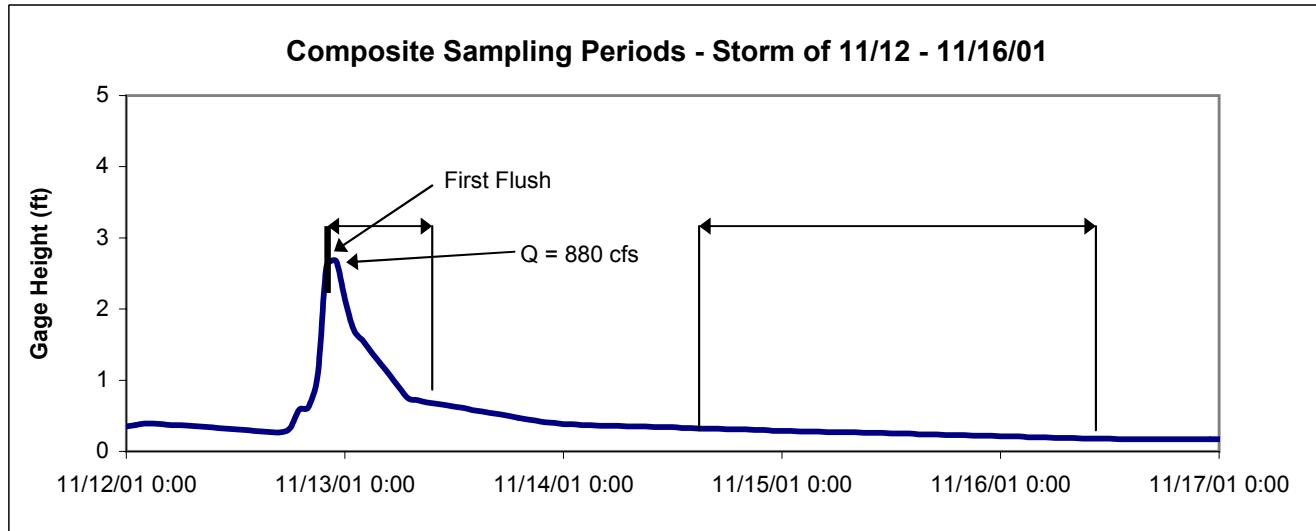
Stormwater Sampling in Santa Ana Delhi Channel



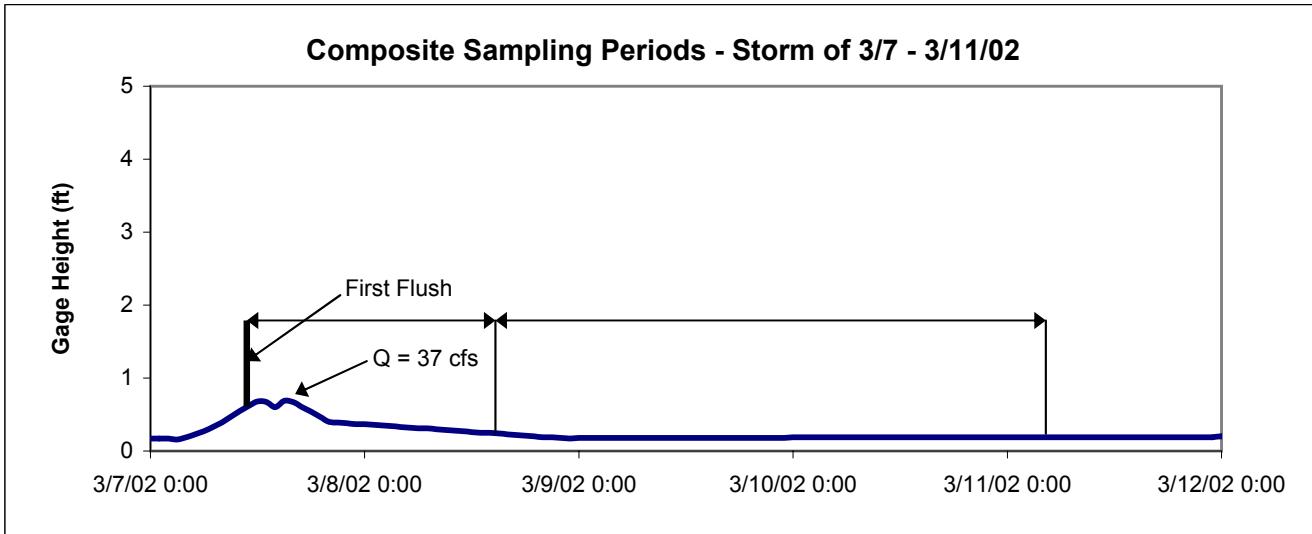
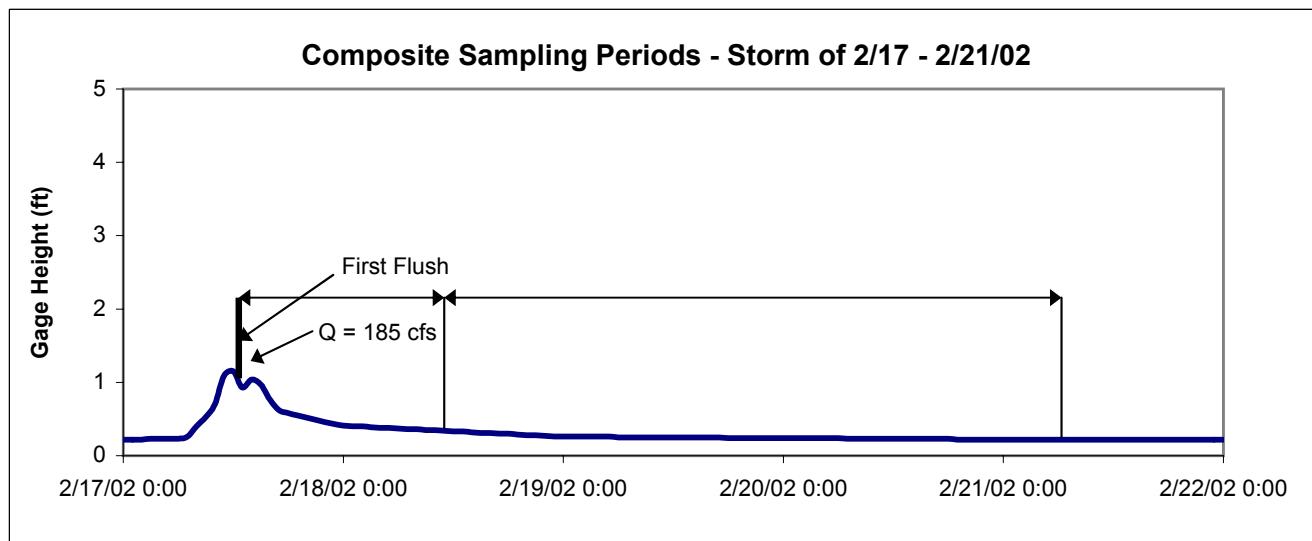
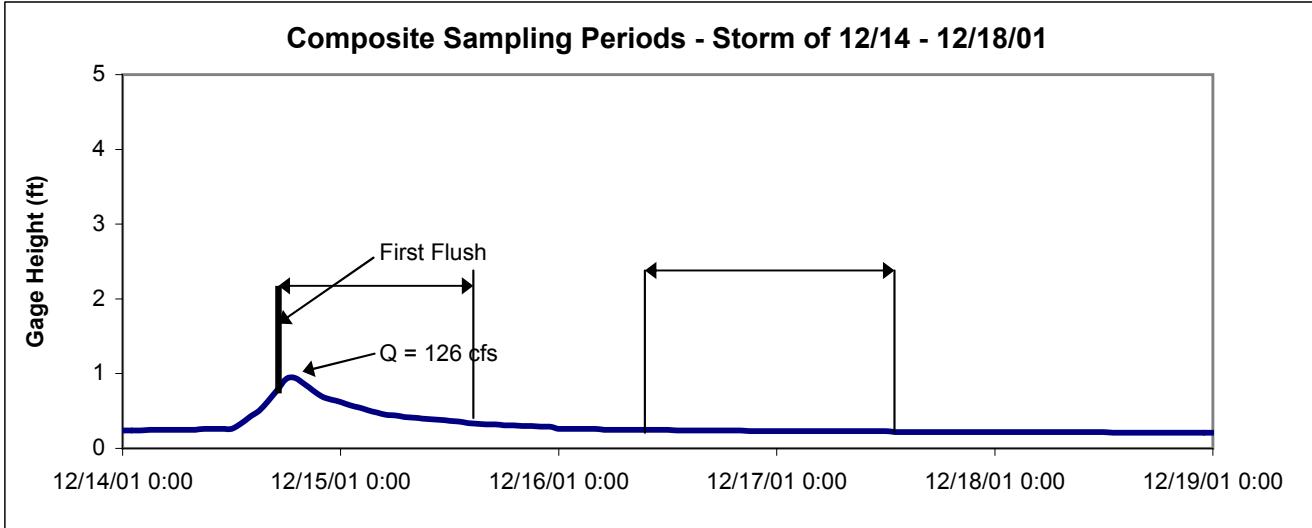
Stormwater Sampling in San Diego Creek @ Campus Drive



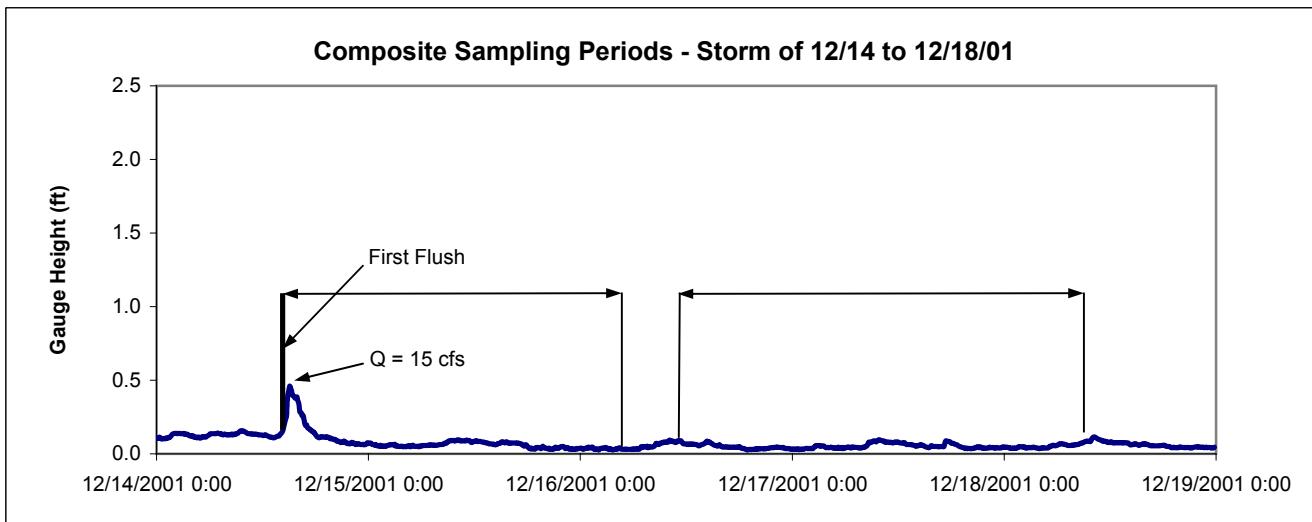
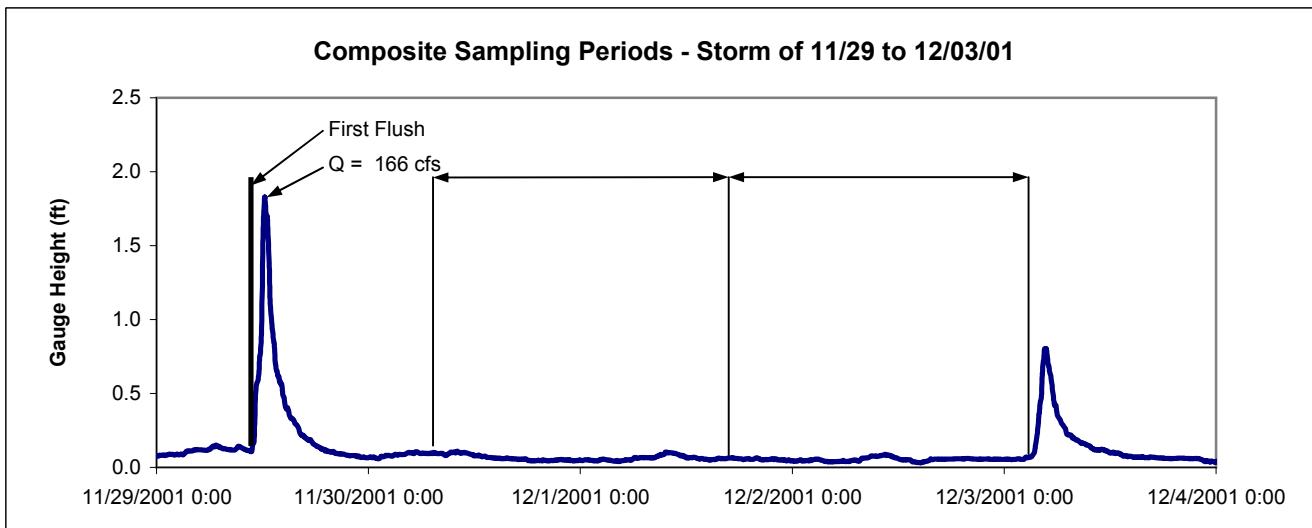
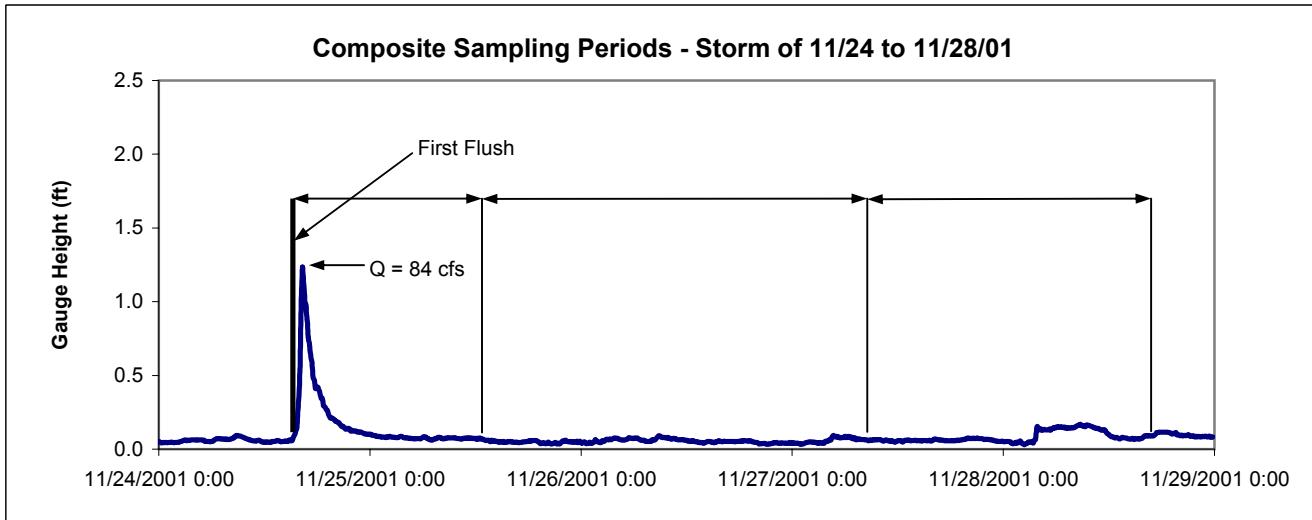
Stormwater Sampling in Peters Canyon Wash @ Culver



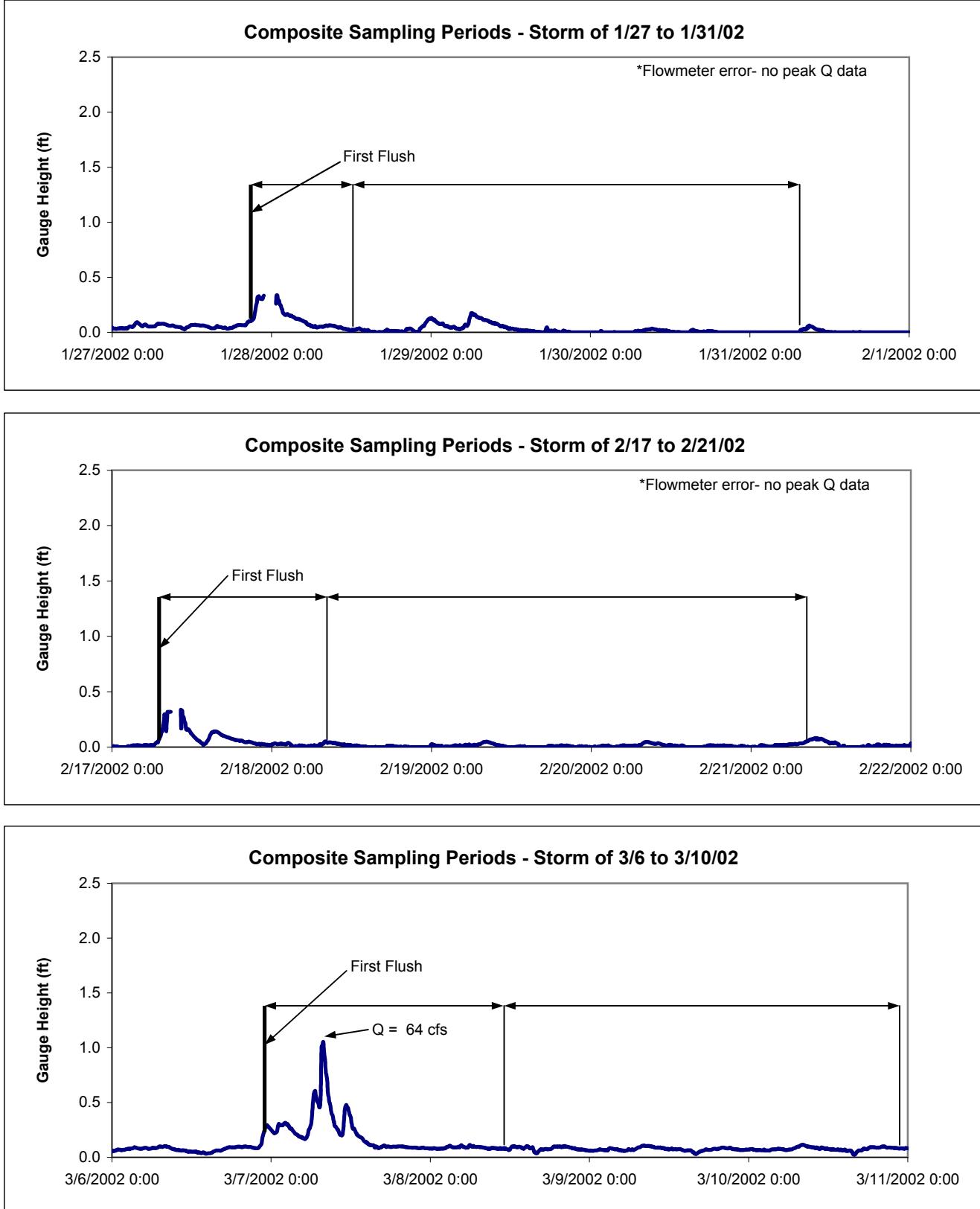
Stormwater Sampling in Peters Canyon Wash @ Culver



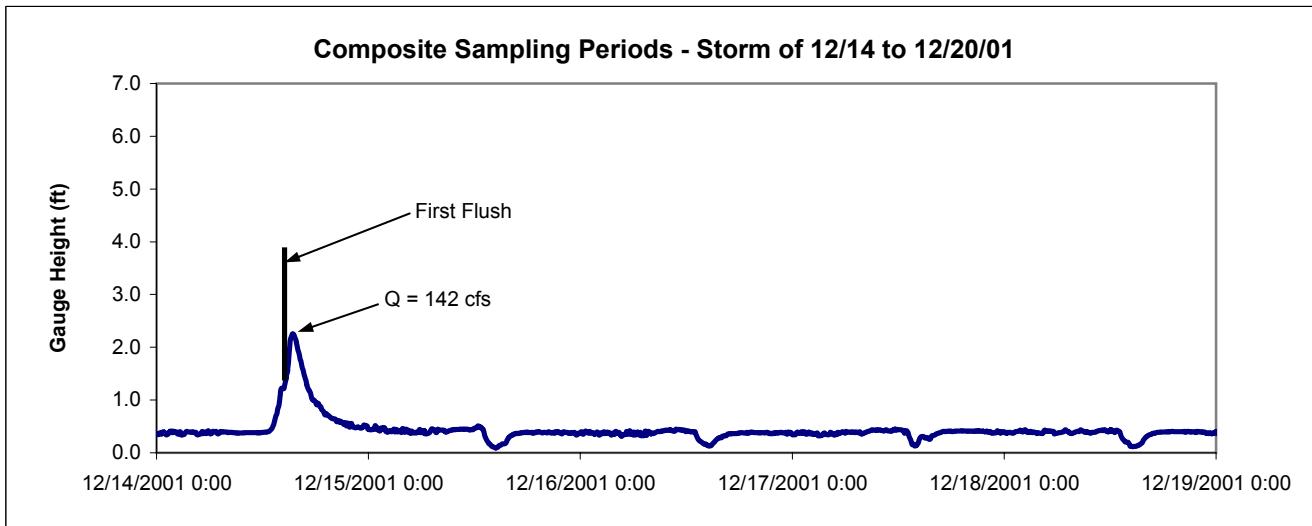
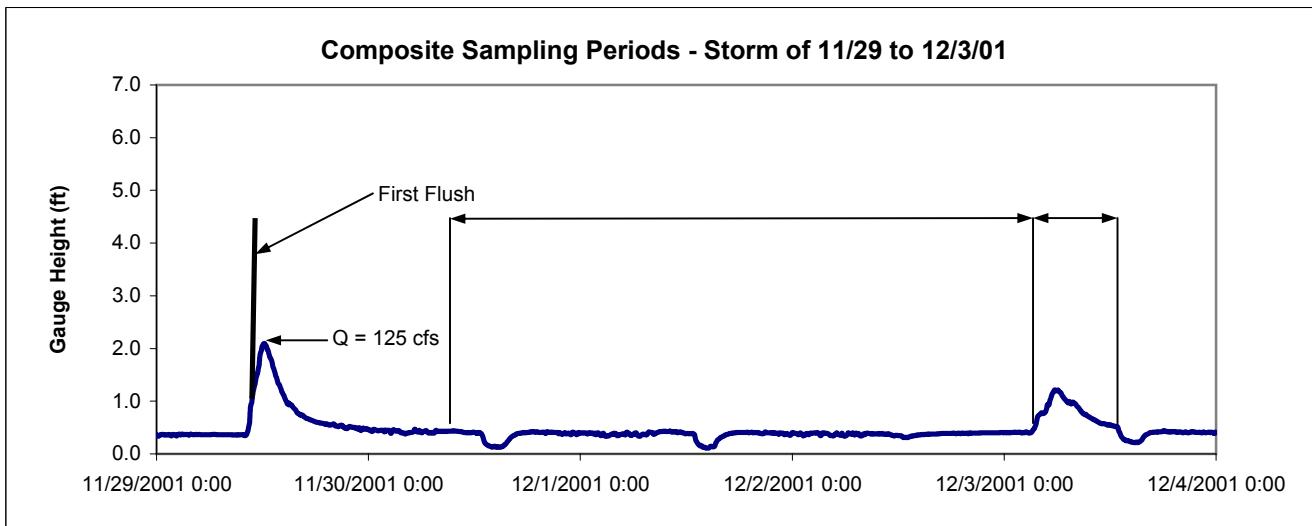
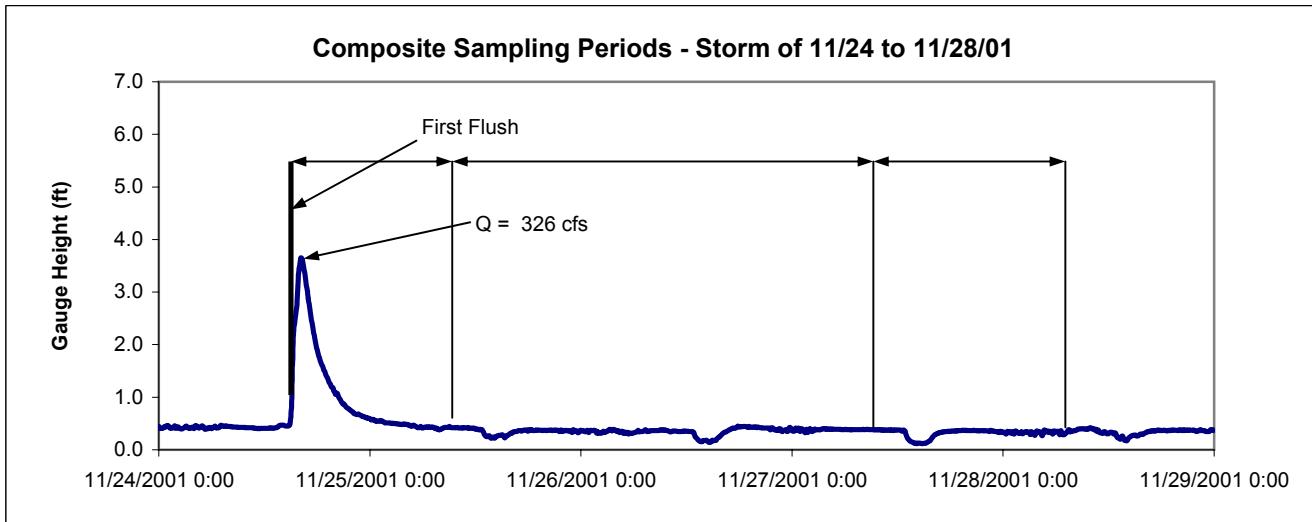
Stormwater Sampling in Costa Mesa Channel



Stormwater Sampling in Costa Mesa Channel



Stormwater Sampling in San Diego Creek @ Lane Channel



Appendix D
Newport Bay Monitoring Data

RMP Bay Sites
Upper Newport Bay - Unit I Basin

Location	DATE	TIME	SAMPLE	Maximum Depth	EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L
				Depth (ft)										
UNBJAM	07/31/01	9:46	S		30270	6	8.2	1.5	0.085	1.2	0.367	-	19	<10
	07/31/01		M		43200	4	7.9	<0.44	0.115	0.77	0.398	-	12	<10
	07/31/01		B	13.12	43610	7.2	7.8	<0.44	0.269	0.81	0.612	-	26	<10
	09/28/01	10:39	S		30800	4.6	8.4	0.97	0.169	5.1	0.226	-	13	<10
	09/28/01		M		36510	3.3	8.4	<0.44	0.119	0.91	0.23	-	15	<10
	09/28/01		B	3.28	42700	3.1	8.1	<0.44	0.14	0.88	0.23	-	20	<10
	10/31/01	8:40	S		38700	3.3	8	2.3	0.249	0.96	0.294	0.098	<10	<10
	10/31/01		M		42330	2.2	8	0.97	0.203	1.4	0.202	0.089	<10	<10
	10/31/01		B	6.56	43000	2	8	0.75	0.152	1.3	0.184	0.083	14	<10
	12/06/01	9:55	S		33200	6.4	7.7	7.4	0.421	1.2	0.245	0.169	11	<10
	12/06/01		M		49800	6.6	7.8	1.5	0.367	0.99	<0.061	0.11	16	<10
	12/06/01		B	6.56	50400	38	7.7	1.5	0.432	1.2	<0.061	0.116	96	<10
	02/01/02	9:51	S		16300	14	8	21	0.275	0.89	0.52	0.13	19	<10
	02/01/02		M		38830	5.2	8	2	0.265	0.66	0.122	0.063	<10	<10
	02/01/02		B	9.84	41300	5	8	1.9	0.254	0.7	0.122	0.061	<10	<10
	02/27/02	10:06	S		40810	4.2	7.9	2	0.176	0.67	0.306	0.086	<10	<10
	02/27/02		M		42720	3.8	8	1.3	0.125	0.59	0.275	0.072	<10	<10
	02/27/02		B	6.56	43650	4.6	8	1.1	0.123	0.64	0.275	0.069	<10	<10
	03/27/02	9:35	S		39700	4	8	3.2	0.168	0.61	0.214	0.077	<10	<10
	03/27/02		M		44400	4.5	8	1.4	0.116	0.49	0.122	0.064	<10	<10
	03/27/02		B	22.97	46080	5.5	8.1	0.62	0.05	0.42	0.0612	0.04	<10	<10
	04/26/02	9:32	S		34500	6.1	7.9	4.8	0.298	0.82	0.275	0.069	12	<10
	04/26/02		M		44210	6.9	7.9	0.57	0.187	0.5	0.153	0.045	24	<10
	04/26/02		B	13.12	44290	8.2	7.9	0.44	0.161	0.5	0.214	0.047	21	<10
	06/28/02	9:10	S		35600	5.3	8	1.1	0.157	0.73	0.153	0.033	<10	<10
	06/28/02		M		46010	3.2	7.9	<0.44	0.075	0.5	0.306	0.074	<10	<10
	06/28/02		B	13.12	46670	4.1	7.9	<0.44	0.161	0.47	0.306	0.1	<10	<10

RMP Bay Sites
Upper Newport Bay - Unit 1 Basin

Date	Time	Depth(m)	EC(µmhos)	Temp(C)	pH	DO(ppm)
07/31/01	9:46	0.0	38800	24.2	7.7	3.9
		1.0	47600	23.7	7.6	4.3
		2.0	48200	23.8	7.6	3.9
		3.0	48900	23.9	7.6	3.0
		4.0	49200	23.9	7.5	2.5
09/28/01	10:39	0.0	42130	22.3	7.5	6.2
		1.0	45250	22.8	7.5	6.2
10/31/01	8:50	0.0	45360	19.5	7.8	4.8
		1.0	46350	19.4	7.9	5.5
		2.0	47290	19.4	7.9	5.6
12/06/01	9:55	0.0	39290	16.6	NM	6.2
		1.0	43670	16.2	NM	5.5
		2.0	44700	16.0	NM	5.3
02/01/02	9:51	0.0	29231	11.9	7.9	7.9
		1.0	43106	13.4	7.8	6.8
		2.0	44575	13.7	7.8	7.0
		3.0	44679	13.7	7.8	7.1
02/27/02	10:06	0.0	44553	18.1	7.7	4.3
		1.0	46970	17.6	7.7	4.2
		2.0	47293	17.4	7.7	4.3
03/27/02	9:35	0.0	41573	16.8	7.6	6.5
		1.0	44426	17.4	7.6	6.6
		2.0	46885	17.2	7.6	6.9
		3.0	47312	16.9	7.6	7.3
		4.0	47620	16.8	7.6	7.4
		5.0	49377	15.8	7.7	7.9
		6.0	49547	15.7	7.7	8.6
		7.0	49566	15.7	7.7	8.7
04/26/02	9:32	0.0	38034	19.1	7.8	3.9
		1.0	46091	19.4	7.7	3.9
		2.0	47718	18.9	7.8	4.2
		3.0	47848	18.9	7.8	4.1
		4.0	47867	18.8	7.8	4.0
		5.0	47890	18.9	7.8	3.9
06/28/02	9:10	0.0	34999	22.9	7.8	6.3
		1.0	47105	24.7	7.8	6.9
		2.0	49343	23.9	7.7	4.3
		3.0	49458	23.8	7.7	3.9
		4.0	49459	23.8	7.7	3.9

RMP Bay Sites
Upper Newport Bay - Unit II Basin

Location	DATE	TIME	SAMPLE	Maximum Depth	EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L
				Depth (ft)										
UNBSDC	07/31/01	10:20	S		36840	3	8.1	0.56	<0.05	0.9	0.337	-	19	<10
	07/31/01		M		38300	3	8	0.52	<0.05	0.88	0.367	-	23	<10
	07/31/01		B	3.28	43120	3.5	8	<0.44	0.052	0.77	0.337	-	25	<10
	09/28/01	10:55	S		37700	2.6	8.3	<0.44	0.138	0.88	0.168	-	<10	<10
	09/28/01		M		44810	3.5	8.2	<0.44	0.1	1.0	0.612	-	14	<10
	09/28/01		B	16.40	45400	23	8.1	<0.44	0.133	0.73	0.104	-	160	17
	10/31/01	8:59	S		43400	1.5	8	0.7	0.137	0.96	0.125	0.071	11	<10
	10/31/01		M		45740	2.7	8	<0.44	0.078	1.1	0.0796	0.044	18	<10
	10/31/01		B	16.40	45700	2.8	8	<0.44	0.068	0.97	<0.061	0.047	<10	<10
	12/06/01	10:19	S		22600	6.6	7.9	4.8	0.426	1.6	0.214	0.138	<10	<10
	12/06/01		M		54300	3.3	7.9	0.92	0.154	0.66	<0.061	0.056	<10	<10
	12/06/01		B	13.12	47000	4.3	7.9	2.2	0.294	0.97	<0.061	0.09	15	<10
	02/01/02	10:12	S		35520	7.4	7.9	3.8	0.375	0.94	0.245	0.092	<10	<10
	02/01/02		M		37590	6.1	8	2.7	0.235	0.9	0.122	0.061	<10	<10
	02/01/02		B	6.56	37890	4.4	8	2.4	0.207	0.88	0.0612	0.049	<10	<10
	02/27/02	10:27	S		45760	3.7	8	0.62	<0.05	0.52	0.153	0.041	<10	<10
	02/27/02		M		45900	3.7	8	0.44	<0.05	0.53	0.122	0.032	<10	<10
	02/27/02		B	6.56	46100	4.5	8	<0.44	<0.05	0.35	0.122	0.031	<10	<10
	03/27/02	10:01	S		42700	3.4	8	2.2	0.101	0.67	0.153	0.1	<10	<10
	03/27/02		M		44320	3.2	8.1	1.1	0.056	0.63	0.0918	0.052	<10	<10
	03/27/02		B	6.56	46100	3.5	8.1	0.92	<0.05	0.58	0.153	0.045	<10	<10
	04/26/02	10:10	S		45610	3.8	8	<0.44	0.112	0.44	0.122	0.031	16	<10
	04/26/02		M		45760	5.7	8	<0.44	0.104	0.44	0.122	0.042	17	<10
	04/26/02		B	9.84	-	-	-	-	-	-	-	-	-	-
	06/28/02	9:40	S		42400	2.8	8	<0.44	0.072	0.44	0.184	0.049	10	<10
	06/28/02		M		45150	2.4	7.9	<0.44	0.087	0.39	0.184	0.063	<10	<10
	06/28/02		B	13.12	45700	2.6	7.9	<0.44	0.105	0.38	0.184	0.067	<10	<10

RMP Bay Sites
Upper Newport Bay - Unit II Basin

Date	Time	Depth(m)	EC(µmhos)	Temp(C)	pH	DO(ppm)
07/31/01	10:20	0.0	41400	23.2	7.8	5.1
		1.0	46100	22.9	7.8	4.9
09/28/01	10:55	0.0	42140	23.1	7.9	6.3
		1.0	46720	22.6	7.9	6.1
		2.0	47700	22.3	7.9	6.4
		3.0	48030	22.0	7.9	6.4
		4.0	48930	21.3	7.9	6.6
		5.0	49350	21.2	7.9	6.7
10/31/01	8:59	0.0	47700	19.1	7.9	5.7
		1.0	49350	18.7	7.9	6.2
		2.0	49930	18.5	8.0	6.2
		3.0	49990	18.5	8.0	6.4
		4.0	50080	18.4	8.0	6.5
		5.0	50090	18.4	8.0	6.2
12/06/01	10:19	0.0	43660	15.6	NM	8.9
		1.0	45680	15.5	NM	7.3
		2.0	47350	15.4	NM	8.8
		3.0	47870	15.4	NM	8.9
		4.0	47900	15.4	NM	8.9
02/01/02	10:12	0.0	41567	13.6	7.8	6.8
		1.0	42094	13.1	7.8	7.2
		2.0	42724	13.1	7.8	7.3
02/27/02	10:27	0.0	49354	16.7	7.8	4.5
		1.0	50007	16.3	7.8	4.5
		2.0	50010	16.3	7.8	5.5
03/27/02	10:01	0.0	46011	16.5	7.7	7.7
		1.0	48160	16.2	7.7	7.8
		2.0	48481	16.0	7.7	8.2
		3.0	48566	16.0	7.7	8.5
04/26/02	10:10	0.0	49857	18.2	7.8	5.9
		1.0	49938	18.0	7.8	5.6
		2.0	49986	18.0	7.8	5.5
		3.0	49992	18.0	7.8	5.4
		4.0	49985	18.0	7.8	5.2
06/28/02	9:40	0.0	44575	22.9	7.9	6.9
		1.0	47484	23.5	7.9	5.6
		2.0	48107	23.5	7.8	5.3
		3.0	48885	23.6	7.8	5.1
		4.0	48908	23.5	7.8	4.9

RMP Bay Sites
Upper Newport Bay - North Star Beach

Location	DATE	TIME	SAMPLE	Maximum Depth	EC	Turb	pH	NO3	NH3	TKN	PO4	o-PO4	TSS	VSS
				Depth (ft)	µmhos	NTU		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
UNBNSB	07/31/01	11:40	S		44900	2.6	8	<0.44	<0.05	0.57	0.214	-	15	<10
	07/31/01		M		45200	2.9	8	<0.44	<0.05	0.57	0.184	-	30	<10
	07/31/01		B	13.12	45320	2.5	8	<0.44	<0.05	0.58	0.153	-	31	<10
	09/28/01	11:26	S		44210	2.6	8.2	<0.44	0.09	0.73	0.0887	-	<10	<10
	09/28/01		M		45100	2.8	8.2	<0.44	0.083	0.75	<0.061	-	22	<10
	09/28/01		B	16.40	45420	3.2	8.1	<0.44	0.083	0.74	<0.061	-	16	<10
	10/31/01	9:30	S		46410	6	8	<0.44	0.073	1.1	<0.061	0.04	<10	<10
	10/31/01		M		46300	3.6	8	<0.44	0.074	0.71	<0.061	0.037	<10	<10
	10/31/01		B	13.12	46200	3.7	8	<0.44	<0.05	0.66	<0.061	0.038	<10	<10
	12/06/01	10:45	S		55200	4.6	8	0.66	0.114	0.73	<0.061	0.04	21	<10
	12/06/01		M		55100	5.1	8	0.57	0.102	0.58	<0.061	0.039	<10	<10
	12/06/01		B	16.40	53700	2.3	8	1.1	0.141	0.6	<0.061	0.053	18	<10
	02/01/02	10:33	S		40750	2.3	8	1.7	0.167	0.78	<0.061	0.047	<10	<10
	02/01/02		M		42280	2.2	8	0.98	0.137	0.7	<0.061	0.036	<10	<10
	02/01/02		B	16.40	43450	2.6	8	1	0.177	0.76	<0.061	0.036	<10	<10
	02/27/02	10:50	S		46900	4.2	8.1	<0.44	<0.05	0.53	0.0918	0.026	<10	<10
	02/27/02		M		46300	6	8.1	<0.44	<0.05	0.48	0.122	0.027	<10	<10
	02/27/02		B	13.12	46840	4.7	8.1	<0.44	<0.05	0.46	0.122	0.025	15	<10
	03/27/02	10:29	S		46200	4.1	8.1	0.7	<0.05	0.53	<0.061	0.055	<10	<10
	03/27/02		M		45600	5.6	8.1	0.62	<0.05	0.41	<0.061	0.039	<10	<10
	03/27/02		B	13.12	46040	6.1	8.1	0.57	<0.05	0.41	<0.061	0.03	<10	<10
	04/26/02	10:40	S		46800	3.7	8	<0.44	0.09	0.37	0.0918	0.027	18	<10
	04/26/02		M		46580	4.4	8	<0.44	0.095	0.41	0.0918	0.029	15	<10
	04/26/02		B	13.12	46300	6.1	8	<0.44	0.094	0.44	0.0918	0.029	10	<10
	06/28/02	10:15	S		47390	3.1	7.9	<0.44	0.062	0.24	0.122	0.043	<10	<10
	06/28/02		M		47300	3.6	8	<0.44	0.087	0.29	0.214	0.04	<10	<10
	06/28/02		B	9.84	47410	3.4	8	<0.44	0.078	0.29	0.184	0.045	12	<10

RMP Bay Sites
Upper Newport Bay - North Star Beach

Date	Time	Depth(m)	EC(µmhos)	Temp(C)	pH	DO(ppm)
07/31/01	11:40	0.0	50800	21.8	7.7	5.9
		1.0	51000	21.7	7.7	5.9
		2.0	51300	21.6	7.7	5.8
		3.0	51400	21.6	7.7	5.7
		4.0	51400	21.6	7.7	5.7
09/28/01	11:26	0.0	48000	22.0	7.9	7.0
		1.0	48420	21.6	7.9	6.9
		2.0	49170	21.4	7.9	7.0
		3.0	49230	21.3	7.9	7.0
		4.0	49410	21.2	7.9	7.0
		5.0	49680	21.0	7.9	7.0
10/31/01	9:30	0.0	50300	18.3	8.0	6.8
		1.0	50310	18.3	8.0	6.9
		2.0	50330	18.3	8.0	6.9
		3.0	50310	18.3	8.0	6.8
		4.0	50310	18.3	8.0	6.8
12/06/01	10:45	0.0	43570	14.9	NM	9.5
		4.0	49050	15.2	NM	8.8
		1.0	46660	14.9	NM	8.9
		5.0	49290	15.3	NM	8.8
		2.0	48010	15.1	NM	8.7
		3.0	49010	15.2	NM	9.0
02/01/02	10:33	0.0	46365	13.3	7.9	8.2
		1.0	47402	13.3	7.9	8.2
		2.0	47835	13.3	7.9	8.1
		3.0	48181	13.4	7.9	8.0
		4.0	48460	13.4	7.9	8.0
		5.0	48400	13.4	7.9	8.0
02/27/02	10:50	0.0	50453	16.2	7.9	7.9
		1.0	50444	16.2	7.9	6.6
		2.0	50470	16.2	7.9	6.6
		3.0	50422	16.1	7.9	5.5
		4.0	50430	16.2	7.9	5.2
03/27/02	10:29	0.0	49744	15.5	7.7	9.2
		1.0	49751	15.5	7.7	9.1
		2.0	49757	15.5	7.7	9.1
		3.0	49773	15.5	7.7	9.1
		4.0	49771	15.5	7.7	9.0
		5.0	49775	15.5	7.7	9.0
04/26/02	10:40	0.0	50331	17.8	7.9	5.9
		1.0	50375	17.7	7.9	5.6
		2.0	50385	17.7	7.9	5.6
		3.0	50383	17.7	7.9	5.6
		4.0	50386	17.7	7.9	5.7

RMP Bay Sites
Upper Newport Bay - North Star Beach

Date	Time	Depth(m)	EC(µmhos)	Temp(C)	pH	DO(ppm)
06/28/02	10:15	0.0	49699	22.5	7.9	7.9
		1.0	49790	22.4	7.9	7.8
		2.0	49960	22.2	7.9	6.8
		3.0	49955	22.2	7.9	6.4

RMP Bay Sites
Upper Newport Bay - Coast Highway Bridge

Location	DATE	TIME	SAMPLE	Maximum Depth	EC	Turb	pH	NO3	NH3	TKN	PO4	o-PO4	TSS	VSS
				Depth (ft)	µmhos	NTU		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
UNBCHB	07/31/01	11:02	S		45600	1.7	8	<0.44	<0.05	<0.20	0.184	-	26	<10
	07/31/01		M		46480	2	8	<0.44	<0.05	0.49	0.122	-	21	<10
	07/31/01		B	6.56	45050	2.2	8	<0.44	<0.05	0.52	0.122	-	33	<10
	09/28/01	11:54	S		46730	3.4	8.2	<0.44	0.057	0.66	<0.061	-	28	<10
	09/28/01		M		46020	13	8.2	<0.44	0.057	0.62	<0.061	-	38	<10
	09/28/01		B	6.56	46100	18	8.1	<0.44	0.057	0.58	0.0704	-	51	<10
	10/31/01	10:00	S		45900	2.6	8	<0.44	<0.05	0.67	<0.061	0.038	<10	<10
	10/31/01		M		46010	3.9	8	<0.44	0.052	0.55	<0.061	0.042	16	<10
	10/31/01		B	9.84	46200	6.1	8	<0.44	0.053	0.66	0.0612	0.042	<10	<10
	12/06/01	11:07	S		54800	3.7	8	0.66	0.104	0.55	<0.061	0.04	17	<10
	12/06/01		M		55600	5.8	8	0.48	0.074	0.49	<0.061	0.034	20	<10
	12/06/01		B	9.84	53900	3.1	8	0.97	0.139	0.59	<0.061	0.052	<10	<10
	02/01/02	10:58	S		44790	2	8	0.7	0.08	0.53	<0.061	0.033	<10	<10
	02/01/02		M		42770	2.3	8.1	0.67	0.104	0.62	<0.061	0.029	<10	<10
	02/01/02		B	6.56	39740	2.1	8	0.67	0.131	0.44	<0.061	0.031	<10	<10
	02/27/02	11:12	S		46760	6.7	8.1	<0.44	<0.05	0.41	0.0918	0.024	<10	<10
	02/27/02		M		46600	3.8	8.1	<0.44	<0.05	0.46	0.122	0.023	<10	<10
	02/27/02		B	6.56	45500	9.1	8.1	<0.44	<0.05	0.39	0.153	0.024	12	<10
	03/27/02	10:50	S		47400	2.4	8.1	<0.44	<0.05	0.23	0.0612	0.031	<10	<10
	03/27/02		M		46610	3.4	8.1	<0.44	<0.05	0.32	<0.061	0.025	<10	<10
	03/27/02		B	6.56	46700	3.9	8.1	<0.44	<0.05	0.35	<0.061	0.029	<10	<10
	04/26/02	11:00	S		46100	4.1	8	<0.44	0.099	0.44	0.122	0.032	16	<10
	04/26/02		M		46380	6.2	8	<0.44	0.112	0.53	0.122	0.031	16	<10
	04/26/02		B	6.56	46900	6.2	8	<0.44	0.085	0.42	0.153	0.028	20	<10
	06/28/02	10:30	S		47450	4.7	8	<0.44	<0.05	0.27	0.153	0.028	<10	<10
	06/28/02		M		47710	4.9	8	<0.44	<0.05	0.29	0.153	0.027	<10	<10
	06/28/02		B	9.84	48700	5.1	8	<0.44	<0.05	0.25	0.184	0.026	<10	<10

RMP Bay Sites
Upper Newport Bay - Coast Highway Bridge

Date	Time	Depth(m)	EC(µmhos)	Temp(C)	pH	DO(ppm)
07/31/01	11:02	0.0	51400	21.9	7.7	6.2
		1.0	51700	21.2	7.7	6.1
		2.0	51800	21.2	7.8	6.2
09/28/01	11:54	0.0	49960	21.3	7.9	8.0
		1.0	50170	21.3	7.9	7.8
		2.0	50080	21.1	7.9	7.5
10/31/01	10:00	0.0	50170	18.4	7.9	6.6
		1.0	50240	18.5	8.0	6.8
		2.0	50260	18.2	7.8	6.6
		3.0	50280	18.3	7.8	6.6
12/06/01	11:07	0.0	47610	15.3	NM	9.9
		1.0	48500	15.3	NM	9.9
		2.0	49120	15.3	NM	10.0
		3.0	49340	15.3	NM	10.0
02/01/02	10:58	0.0	49246	13.5	8.0	8.5
		1.0	49187	13.5	8.0	8.5
		2.0	49238	13.5	8.0	8.3
02/27/02	11:12	0.0	50385	16.3	7.9	5.8
		1.0	50420	16.2	7.9	4.9
		2.0	50462	16.2	7.9	4.8
03/27/02	10:50	0.0	50513	15.1	7.8	9.6
		1.0	50607	15.0	7.8	9.6
		2.0	50580	15.1	7.8	9.6
04/26/02	11:00	0.0	50480	17.7	7.8	5.7
		1.0	50409	17.7	7.9	5.6
		2.0	50680	17.4	7.9	5.8
06/28/02	10:30	0.0	50729	21.4	7.9	8.0
		1.0	50800	21.3	7.9	7.8
		2.0	50846	21.2	7.9	7.5
		3.0	50866	21.2	7.9	7.4

RMP Bay Sites
Upper Newport Bay - Harbor Island Reach

Location	DATE	TIME	SAMPLE	Maximum Depth	EC μmhos	Turb NTU	pH	NO3 mg/L	NH3 mg/L	TKN mg/L	PO4 mg/L	o-PO4 mg/L	TSS mg/L	VSS mg/L
				Depth (ft)										
LNBHIR	07/31/01	11:30	S		46650	3	8	<0.44	<0.05	0.56	0.0918	-	34	<10
	07/31/01		M		46810	5.3	8	<0.44	<0.05	0.25	0.122	-	17	<10
	07/31/01		B	16.40	46830	7	8	<0.44	<0.05	0.31	0.153	-	17	<10
	09/28/01	12:13	S		46700	3.1	8.2	<0.44	<0.05	0.6	<0.061	-	<10	<10
	09/28/01		M		46500	4.4	8.2	<0.44	<0.05	0.68	<0.061	-	11	<10
	09/28/01		B	9.84	46400	4.7	8.2	<0.44	<0.05	0.72	<0.061	-	<10	<10
	10/31/01	10:25	S		46000	2.9	8	<0.44	<0.05	1.1	<0.061	0.049	<10	<10
	10/31/01		M		47100	3.3	8	<0.44	<0.05	1	<0.061	0.033	18	<10
	10/31/01		B	19.69	46350	3.6	8	<0.44	<0.05	0.78	0.0612	0.031	13	<10
	02/01/02	11:10	S		43150	1.7	8	0.98	0.122	0.63	<0.061	0.038	<10	<10
	02/01/02		M		45100	1.6	8.1	<0.44	0.128	0.44	<0.061	0.022	<10	<10
	02/01/02		B	16.40	45000	1.4	8.1	<0.44	0.135	0.42	<0.061	0.018	<10	<10
	04/26/02	11:16	S		47200	5.2	8	<0.44	0.073	0.38	0.122	0.028	20	<10
	04/26/02		M		47470	4.4	8	<0.44	0.069	0.45	0.0918	0.024	17	<10
	04/26/02		B	16.40	47330	9.1	8	<0.44	0.076	0.42	0.122	0.021	26	<10
	06/28/02	10:50	S		47500	6.7	8	<0.44	0.08	<0.2	0.184	0.026	<10	<10
	06/28/02		M		48120	7	8	<0.44	<0.05	0.23	0.184	0.025	11	<10
	06/28/02		B	19.69	48400	8.8	8	<0.44	<0.05	<0.2	0.153	0.027	23	<10

RMP Bay Sites
Lower Newport Bay - Harbor Island Reach

Date	Time	Depth(m)	EC(µmhos)	Temp(C)	pH	DO(ppm)
07/31/01	11:30	0.0	52000	21.0	7.7	6.6
		1.0	52000	20.9	7.8	6.5
		2.0	52100	20.8	7.8	6.4
		3.0	52200	20.6	7.8	6.3
		4.0	52300	20.5	7.8	6.1
		5.0	52200	20.4	7.8	6.2
09/28/01	12:13	0.0	50640	20.6	8.0	8.6
		1.0	50600	20.7	7.9	8.6
		2.0	50650	20.3	7.9	8.4
		3.0	50660	20.3	7.9	8.4
10/31/01	10:25	0.0	50420	18.4	8.0	6.9
		1.0	50490	18.2	8.0	6.9
		2.0	50690	17.9	8.0	7.0
		3.0	50740	17.8	8.0	7.0
		4.0	50810	17.6	8.0	7.0
		5.0	50930	17.5	8.0	7.0
		6.0	50950	17.5	8.0	7.2
02/01/02	11:10	0.0	48593	13.6	8.0	8.4
		1.0	49081	13.4	8.0	8.4
		2.0	50010	13.6	8.0	8.1
		3.0	50135	13.7	8.0	8.2
		4.0	50450	13.7	8.0	8.3
		5.0	50629	13.7	8.0	8.4
04/26/02	11:16	0.0	50747	17.4	7.9	6.2
		1.0	50882	16.9	7.9	5.9
		2.0	50930	16.8	7.9	6.0
		3.0	51168	16.2	7.9	6.0
		4.0	51138	15.8	7.9	6.3
		5.0	51222	15.7	7.9	6.3
06/28/02	10:50	0.0	50935	21.7	7.9	7.1
		1.0	50899	21.4	7.9	7.0
		2.0	50939	21.2	7.9	6.7
		3.0	50931	21.2	7.8	6.8
		4.0	50965	21.1	7.9	6.8
		5.0	50970	21.0	7.9	6.8
		6.0	50978	21.0	7.8	6.8

Appendix E
Analysis of Macroalgae (Seaweed) in Newport Bay

Newport Bay Algae Monitoring Water Quality Analysis

Location	Date	Time	TN mg/L	OPO₄ mg/L	EC μmhos	TEMP °C	DO mg/L
HORNE #2	02/06/02	13:31	1.22	0.089	41633	15.86	7.04
	03/14/02	15:56	1.10	0.051	44926	17.64	8.14
HORNE #4	02/06/02	13:20	1.22	0.099	40699	15.84	7.62
	03/14/02	15:42	0.85	0.065	46613	18.37	8.00
HORNE #7	02/06/02	13:11	1.73	0.104	37842	16.20	7.20
	03/14/02	15:35	1.18	0.088	44371	18.50	7.56
HORNE #9	02/06/02	12:59	1.53	0.12	37506	16.70	8.35
	03/14/02	15:28	0.95	0.075	45465	18.30	8.00
HORNE #13	02/06/02	12:51	1.87	0.104	36181	16.96	7.35
	03/14/02	15:18	1.03	0.053	46414	18.27	8.28
HORNE #16	02/06/02	12:35	1.64	0.284	33147	17.60	7.20
	03/14/02	14:46	2.46	0.083	20115	18.82	8.18
HORNE #19	02/06/02	12:19	2.19	0.126	38734	15.72	6.76
	03/14/02	15:10	1.34	0.091	44258	18.54	6.20
HORNE #24	02/06/02	12:16	4.10	0.15	21850	16.02	8.47
	03/14/02	14:59	2.50	0.111	33188	18.78	7.29

Newport Bay Algae Monitoring Percent Composition and Weight Analysis

Location	Date	Time	Algae Sample #1					Algae Sample #2					Algae Sample #3				
			%U	%E	%C	WW	DW	%U	%E	%C	WW	DW	%U	%E	%C	WW	DW
HORNE #2	07/26/01	12:36	5%	95%	0%	5.42	0.68	10%	90%	0%	0.41	0.04	1%	99%	0%	1.55	0.35
	08/22/01	7:55	0%	0%	100%	23.89	9.76	0%	0%	100%	8.45	4.00	0%	0%	100%	19.28	9.66
	10/15/01	17:51	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	11/28/01	12:20	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	02/06/02	13:31	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	15:56	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
HORNE #4	07/26/01	12:18	0%	95%	5%	42.37	6.29	0%	95%	5%	84.37	--	0%	100%	0%	0.12	0.02
	08/22/01	8:25	0%	0%	100%	42.18	28.49	0%	0%	100%	83.62	12.36	0%	0%	100%	52.30	--
	10/15/01	17:00	100%	0%	0%	1.62	0.59	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	11/28/01	12:10	20%	80%	0%	119.20	18.80	10%	90%	0%	208.60	23.18	20%	80%	0%	318.64	--
	02/06/02	13:20	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	15:42	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
HORNE #7	07/26/01	11:50	5%	95%	0%	171.24	32.94	5%	95%	0%	333.34	92.65	5%	95%	0%	257.63	50.07
	08/22/01	8:45	0%	0%	100%	59.83	15.50	1%	0%	99%	122.48	25.82	1%	0%	99%	88.11	15.53
	10/15/01	16:45	99%	1%	0%	1.02	0.24	85%	15%	0%	1.87	0.41	60%	40%	0%	1.23	0.26
	11/28/01	11:55	50%	50%	0%	1.45	0.14	10%	90%	0%	6.35	1.03	60%	40%	0%	6.48	0.68
	02/06/02	13:11	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	15:35	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
HORNE #9	07/26/01	11:20	100%	0%	0%	8.24	1.32	10%	40%	50%	80.35	--	80%	15%	5%	168.89	56.37
	08/22/01	9:05	100%	0%	0%	46.30	6.66	100%	0%	0%	143.36	30.19	100%	0%	0%	341.88	--
	10/15/01	16:30	15%	80%	5%	57.48	1.30	15%	85%	0%	128.42	17.91	20%	80%	0%	134.77	--
	11/28/01	11:40	10%	50%	40%	31.72	5.53	20%	50%	30%	50.47	10.09	10%	45%	45%	37.21	--
	02/06/02	12:59	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	15:28	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
HORNE #13	07/26/01	10:48	95%	5%	0%	16.41	3.41	75%	20%	5%	116.08	36.85	90%	9%	1%	101.90	23.75
	08/22/01	9:30	20%	80%	0%	71.98	17.32	30%	40%	30%	11.11	2.22	50%	50%	0%	19.71	5.14
	10/15/01	16:15	95%	5%	0%	329.02	109.40	100%	0%	0%	64.04	9.62	98%	2%	0%	56.86	11.49
	11/28/01	11:20	100%	0%	0%	2.81	1.14	100%	0%	0%	3.76	0.85	100%	0%	0%	15.27	3.41
	02/06/02	12:51	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	15:18	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00

Newport Bay Algae Monitoring Percent Composition and Weight Analysis

Location	Date	Time	Algae Sample #1					Algae Sample #2					Algae Sample #3				
			%U	%E	%C	WW	DW	%U	%E	%C	WW	DW	%U	%E	%C	WW	DW
HORNE #16	07/26/01	10:24	90%	10%	0%	18.89	6.08	95%	5%	0%	359.68	--	95%	5%	0%	29.04	6.45
	08/22/01	9:45	100%	0%	0%	143.08	15.70	99%	1%	0%	40.82	7.19	99%	1%	0%	276.67	--
	10/15/01	15:56	50%	30%	20%	13.37	2.72	45%	45%	10%	38.04	5.30	40%	40%	20%	45.71	--
	11/28/01	11:10	90%	0%	10%	0.27	0.04	90%	5%	5%	6.36	1.42	0%	0%	0%	0.00	0.00
	02/06/02	12:35	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	15:10	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
HORNE #19	07/26/01	9:52	95%	5%	0%	143.89	27.41	85%	10%	5%	187.55	87.33	80%	15%	5%	60.61	14.03
	08/22/01	10:02	90%	10%	0%	3.70	1.10	90%	10%	0%	6.30	2.13	70%	30%	0%	7.86	1.89
	10/15/01	15:37	20%	80%	0%	217.90	159.01	10%	90%	0%	49.27	10.49	5%	95%	0%	212.04	132.64
	11/28/01	10:50	100%	0%	0%	40.43	6.27	100%	0%	0%	17.56	4.84	100%	0%	0%	4.21	0.65
	02/06/02	12:19	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	14:59	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
HORNE #24	07/26/01	9:15	30%	40%	30%	109.26	40.62	5%	90%	5%	7.17	2.28	5%	90%	5%	8.92	--
	08/22/01	10:15	100%	0%	0%	98.37	13.23	100%	0%	0%	229.64	10.79	100%	0%	0%	293.09	--
	10/15/01	15:10	0%	50%	50%	0.57	0.17	85%	15%	0%	171.13	--	90%	0%	10%	0.83	0.20
	11/28/01	10:30	100%	0%	0%	1.62	0.43	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	02/06/02	12:16	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00
	03/14/02	14:46	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00	0%	0%	0%	0.00	0.00

%U = Percent *Ulva*, %E = Percent *Enteromorpha*, %C = Percent *Centroceras*

WW = Wet Weight in grams, DW = Dry Weight in grams

-- Indicates that the sample was submitted to a laboratory for Total N and Total P analysis